

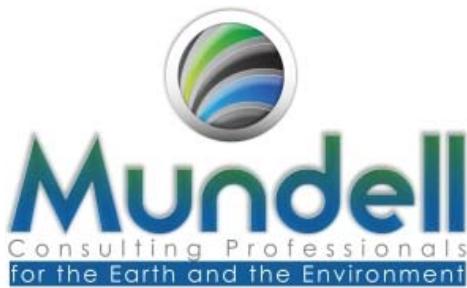
## QUARTERLY MONITORING PROGRESS REPORT, 4<sup>TH</sup> QUARTER, 2012

---

MICHIGAN PLAZA  
3801-3823 WEST MICHIGAN STREET  
INDIANAPOLIS, INDIANA 46222  
IDEM INCIDENT NO.: 0000198  
IDEM VRP NO.: 6061202  
MUNDELL PROJECT NO.: M01046  
JANUARY 31, 2013



110 South Downey Avenue  
Indianapolis, Indiana 46219-6406  
317-630-9060, fax 317-630-9065  
[www.MundellAssociates.com](http://www.MundellAssociates.com)



---

110 South Downey Avenue, Indianapolis, Indiana 46219-6406  
Telephone 317-630-9060, Facsimile 317-630-9065  
[www.MundellAssociates.com](http://www.MundellAssociates.com)

January 31, 2013

Mr. Corey Webb  
Voluntary Remediation Program  
Office of Land Quality  
100 North Senate Avenue  
Indianapolis, Indiana 46204

Re: **Quarterly Monitoring Progress Report – 4<sup>th</sup> Quarter 2012**  
Michigan Plaza  
3801-3823 West Michigan Street  
Indianapolis, Indiana 46222  
IDEM Incident # 0000198  
IDEM VRP # 6061202  
MUNDELL Project No. M01046

Dear Mr. Webb:

This *Quarterly Monitoring Progress Report* is being submitted to the Indiana Department of Environmental Management (IDEM) by Mundell & Associates, Inc. (MUNDELL), on behalf of AIMCO Michigan Meadows Holdings, LLC (AMMH), to summarize remediation activities and quarterly monitoring performed between October 1 and December 31, 2012. The following sections provide detailed discussions of the results of this work. All activities were completed on schedule.

## **1.0 SUMMARY OF MONITORING ACTIVITIES**

### **1.1 Groundwater Monitoring Network Sampling**

Between November 13 and November 21, 2012, quarterly groundwater sampling of twenty-eight (28) monitoring wells established with IDEM, twelve (12) additional MUNDELL monitoring wells on the Floral Park Cemetery property, and four (4) ENVIRON monitoring wells was completed. The following constitute this quarterly groundwater monitoring network:

*A. MUNDELL monitoring wells (40 total):*

*Michigan Plaza and Vicinity (15):*

MMW-P-01, MMW-P-02, MMW-P-03S, MMW-P-03D, MMW-P-04, MMW-P-05, MMW-P-06, MMW-P-07, MMW-P-08, MMW-P-09S, MMW-P-09D, MMW-P-10S, MMW-P-10D, MMW-P-12S, and MMW-P-12D.

*Maple Creek Village Apartment Complex (13):*

MMW-1S, MMW-4D, MMW-6D, MMW-8S, MMW-9S, MMW-10S, MMW-11S, MMW-11D, MMW-12S, MMW-13D, MMW-14D, MMW-15S, and MMW-15D.

*Floral Park Cemetery (12):*

MMW-C-01, MMW-C-02S, MMW-C-02D, MMW-C-16S, MMW-C-16D, MMW-C-17D, MMW-P-11S, MMW-P-11DR, MMW-P-13S, MMW-P-13D, MMW-P-14S, and MMW-P-14D.

*B. ENVIRON monitoring wells (4):*

MW-167D, MW-168D, MW-170S, MW-170D.

MUNDELL also measured static groundwater elevations via an electric oil/water interface probe from the above-listed monitoring well network on November 11, 2012. Additional wells gauged during this sampling event consist of:

*Maple Creek Village monitoring wells:*

MMW-3S, MMW-7S, MMW-5D.

*ENVIRON monitoring wells:*

MW-166S, MW-166D, MW-167S, MW-168S, MW-169S, MW-169D, MW-171S, MW-171D, MW-174S, MW-174D, MW-175S, and MW-175D.

*Little Eagle Creek Stream gauge Locations:*

SG-1.

*US EPA wells:*

MW-WES-01A, MW-WES-01B, MW-WES-01C, MW-WES-02A, MW-WES-02B, MW-WES-02C, MW-WES-03A, MW-WES-03B, MW-WES-04A, MW-WES-04B, MW-WES-05A, MW-WES-05B, and MW-WES-05C.

Monitoring well gauging, survey and construction data are provided in **Table 1**. A site map depicting monitoring well locations is provided as **Figure 1**, and separate potentiometric surface maps for wells screened within the shallow portion and deeper portion of the upper sand and gravel aquifer are depicted on **Figure 2a** and **Figure 2b**, and **Figure 3a** and **Figure 3b**, respectively.

The monitoring wells were sampled utilizing both dedicated and portable bladder pumps for uniform low-flow purging and sample collection. The Troll 9500 multi-parameter meter (used inline with the bladder pumps) logs geochemical parameters (temperature, pH, dissolved oxygen, conductivity and oxidation-reduction potential), which help remove a minimal but sufficient amount of water (indicated by stabilization of geochemical parameters) to sample the well. The Troll helps assess the geochemical parameters to determine if conditions naturally conducive to natural attenuation exist in the aquifer. Excess purge water was transported to 55-gallon drums located at the Michigan Plaza property for subsequent proper off-site disposal. In accordance with IDEM guidelines, the contents in each drum were then identified with a label describing them as non-hazardous materials.

As agreed in the October 29<sup>th</sup>, 2008 meeting with IDEM and detailed in the *Remediation Work Plan Addendum* dated November 2008, groundwater samples were submitted to Pace Analytical Laboratories (Pace) in Indianapolis, Indiana, for the shorter list of Volatile Organic Compound (VOC) analysis utilizing U.S. EPA SW-846 Method 8260, along with appropriate duplicate (DUP), matrix spike (MS) and matrix spike duplicate (MSD) samples. Groundwater samples were transferred into three 40-milliliter glass sample vials containing the preservative hydrochloric acid (HCl). Groundwater sample vials were sealed in plastic bags and placed in a cooler containing ice and delivered to Pace using appropriate chain-of-custody protocol for laboratory tests. Pace laboratory certificates of analysis for the groundwater samples analyzed are presented in **Appendix A**. As will be discussed, the data indicate that anaerobic conditions which support the reductive dechlorination process currently exist in the aquifer.

Additional aquifer parameters, consisting of nitrate/nitrite (EPA 353.2), sulfate (ASTM D512-90,02), ferrous iron (field test - 1,10 Phenanthroline), total organic carbon (SM 5310C), methane (AM20GAX), ethane (AM20GAX) and ethane (AM20GAX) were analyzed to evaluate indicator compound breakdown and redox-sensitivity. In addition, volatile fatty acids (VFA) were tested to evaluate the bioremediation substrate CAP18 ME<sup>TM</sup> distribution and lifetime duration of the substrate product. These samples were collected in the previously selected indicator well locations representative of each plume to monitor the presence of residual CAP 18 ME<sup>TM</sup> in the aquifer and to provide additional monitoring of aquifer conditions. These identified locations consist of:

**Source Area A:** MMW-P-02, MMW-P-03S, MMW-P-03D, MMW-P-11S, MMW-P-11DR, and MMW-C-01;

**Source Area B:** MMW-P-01, MMW-P-05, MMW-P-06, MMW-P-07, MMW-P-08, MMW-P-10S, MMW-P-10D, MMW-8S, MMW-P-12S, and MMW-P-12D;

**Source Area C:** MMW-1S, MMW-9S, and MMW-10S.

## 2.0 MONITORING RESULTS

### 2.1 Groundwater Flow

During the preparation of the potentiometric surface maps for the Site, static water level data collected in the vicinity of Holt Road and Michigan Street - shallow zone ENVIRON monitoring well MW-174S, MW-175S, U.S. EPA monitoring well MW-WES-01a MW-WES-05a, and deep zone ENVIRON well MW-174D and MW-175D did not conform to the relative changes in water levels from Q3/2012 readings in nearby monitor wells.

Previously, MUNDELL has contacted ENVIRON personnel to request access to their MW-174 well set to complete an independent re-survey, in order to verify that the top of casing (TOC) elevations were accurate. The resurvey of the ground surface completed in November 2012, along with previous measurements of offset between TOC and ground surface (conducted with ENVIRON personnel present) determined the ENVIRON TOC elevations appear to be accurate.

A review of the potentiometric surface map for the wells screened within the shallow portion of the surficial aquifer zone (**Figure 2a**) shows that direction of groundwater flow in the vicinity of **Source Areas A, B and C** is from the north-northwest to the south-southeast. There is no component of groundwater flow towards the residential area west of Holt Road. This flow pattern exists even if the “suspect” static water elevation from MW-174S is included (**Figure 2b**).

A review of the potentiometric surface map for the wells screened within the deeper portion of the surficial aquifer (**Figure 3a**) indicates a similar groundwater flow direction, *i.e.*, north-northwest to south-southeast in the vicinity of Source Areas A, B and C. As with the shallow portion of the surficial aquifer, the direction of flow in the deeper portion remains the same even if the suspect water levels in the monitor wells mentioned above are considered (**Figure 3b**). Again, there is no component of groundwater flow towards the residential area west of Holt Road.

### 2.2 Groundwater Analytical Results

Groundwater analytical testing results for this quarter are summarized in **Table 2** and presented on **Figure 4** (shallow portion of aquifer) and **Figure 5** (deeper portion of

aquifer), the cumulative historic groundwater results are included in **Table 3**, and the cumulative groundwater analytical data for enhanced anaerobic bioremediation are included in **Table 4**. The historical indicator compounds trends in groundwater are presented in **Figure 6**. A summary of exceedances within the shallow monitoring well network and deep monitoring well network follows.

### **2.2.1 Shallow Monitoring Well Network Summary**

#### **PCE**

PCE concentrations were reported in exceedance of the associated IDEM RISC Industrial Default Closure Level (IDCL) in the following monitoring wells:

*Maple Creek Village Apartments:* MMW-1S.

*Floral Park Cemetery:* MMW-P-11S.

PCE was reported in exceedance of the IDEM RISC Residential Default Closure Level (RDCL) in the following monitoring wells:

*Maple Creek Village Apartments:* MMW-8S, MMW-9S, and MMW-10S.

*Michigan Plaza and Vicinity:* MMW-P-01 and MMW-P-02.

#### **TCE**

TCE concentrations were reported in exceedance of the associated IDEM RISC RDCL in the following monitoring wells:

*Maple Creek Village Apartments:* MMW-1S, MMW-9S, and MMW-10S.

*Michigan Plaza and Vicinity:* MMW-P-01.

#### **Cis-1,2 DCE**

Cis-1,2 DCE concentrations were reported in exceedance of the IDEM RISC IDCL in the following monitoring wells:

*Michigan Plaza and Vicinity:* MMW-P-06.

Cis-1,2 DCE concentrations were reported in exceedance of the IDEM RISC RDCL in the following monitoring wells:

*Maple Creek Village Apartments:* MMW-9S, MMW-10S and MMW-12S.

*Michigan Plaza and Vicinity:* MMW-P-01, MMW-P-08, and MMW-P-12S.

**VC**

VC concentrations were reported in exceedance of the IDEM RISC IDCL in the following monitoring wells:

*Maple Creek Village Apartments:* MMW-8S, MMW-9S, MMW-10S, and MMW-12S.

*Michigan Plaza and Vicinity:*

MMW-P-01, MMW-P-02, MMW-P-03S, MMW-P-05, MMW-P-06, MMW-P-07, MMW-P-08, and MMW-P-12S.

*Floral Park Cemetery:*

MMW-C-01, MMW-C-11S, and MMW-C-13S.

VC concentrations were reported in exceedance of the IDEM RISC RDCL in the following monitoring wells:

*Michigan Plaza and Vicinity:*

MMW-P-10S.

## **2.2.2 Deep Monitoring Well Network Summary**

**PCE**

PCE was not identified at concentrations in exceedance of the associated IDEM RISC IDCL or RDCL within deep wells across the study area.

**TCE**

TCE was not identified at concentrations in exceedance of the associated IDEM RISC IDCL or RDCL within deep wells across the study area.

**Cis-1,2 DCE**

*Cis-1,2 DCE* concentrations were reported in exceedance of the IDEM RISC RDCL in the following monitoring wells:

*Maple Creek Village Apartments:* MMW-4D, MMW-11D, MMW-13D, and MMW-14D.

*Michigan Plaza and Vicinity:* MMW-P-12D.

*ENVIRON monitoring wells:* MW-167D.

**VC**

VC concentrations were reported in exceedance of the IDEM RISC IDCL in the following monitoring wells:

*Maple Creek Village Apartments:* MMW-4D, MMW-6D, MMW-13D, and MMW-14D.

*Michigan Plaza and Vicinity:* MMW-P-03D, MMW-P-09D, MMW-P-10D, and MMW-P-12D.

*Floral Park Cemetery:* MMW-C-02D, MMW-C-16D, MMW-P-11DR, and MMW-P-13D.

*ENVIRON monitoring wells:* MW-167D, MW-168D, and MW-170D.

VC concentrations were reported in exceedance of the IDEM RISC RDCL in the following monitoring wells:

*Maple Creek Village Apartments:* MMW-11D.

The deep monitoring wells MMW-4D, MMW-11D, and MMW-13D located at the Maple Creek Village Apartment Complex exhibited cis-1,2-DCE groundwater concentrations exceeding the RISC RDCL. These wells also either currently exhibit or have historically exhibited vinyl chloride exceedances above IDCLs this quarter. Since these wells have been purposefully located hydraulically upgradient of all three **Chemical Source Areas**, the impacts observed in these wells demonstrate groundwater impacts that are attributable to other upgradient, off-site sources and not to Michigan Plaza.

The locations of all three **Chemical Source Areas** are presented on **Figure 1**. As seen on **Figure 5** the indicator compound concentrations at the deep, upgradient wells MMW-4D, MMW-11D, and MMW-13D can be considered as “background levels” defined as the concentration of contaminants from the Genuine source coming into the deeper aquifer in this area.

Based on a review of the ENVIRON *Remedial Progress Report* dated June 2012, which summarizes March 2012 sampling activities for Genuine Parts associated with VRP Site No. 6991004, groundwater sampling has identified the following RISC IDCL exceedances:

- TCE: MW-10-1R, MW-148R; MW-152, MW-153, MW-156, MW-163, MW-173;
- Cis-1,2-DCE: MW-166D; and
- Vinyl chloride: MW-165D, MW-166D.

The exceedances identified in the ENVIRON monitoring well network are further reinforced by exceedances detected along the northern property boundary this quarter from MUNDELL wells MMW-4D and MMW-6D, in addition to wells MMW-11D, MMW-13D and MMW-15D, located further downgradient of the property boundary, but north of the Michigan Plaza **Chemical Source Areas**. Annual sampling at MUNDELL well MMW-5D confirms the elevated concentrations that have migrated onto the apartment complex over the years (see **Figure 6**).

## 2.3 In-Situ Bioremediation Progress

Based upon:

- 1) The extent and severity of the indicator compound concentrations and trends;
- 2) Site-specific operational constraints and uses;
- 3) Geochemical and physical characteristics of the aquifer; and
- 4) Economic factors;

In-situ bioremediation with CAP18<sup>TM</sup> and CAP 18 ME<sup>TM</sup>, followed by Monitored Natural Attenuation (MNA) is the appropriate remediation technology being used for the Site for treating groundwater, as detailed in the *RWP*. The initial CAP 18<sup>TM</sup> injection was performed in each of the three source areas in August 2007 using a direct push Geoprobe system. Locations and spacing of the injection points were designed to address the sewer line related **Chemical Source Areas** and provide injection locations in each **Chemical Source Area**. The anticipated downgradient migration of the initial CAP 18 ME<sup>TM</sup> was expected to remediate the most significant groundwater impacts.

A booster CAP 18 ME<sup>TM</sup> injection was performed in February 2009 to aggressively treat some areas where the chemical concentrations began to stabilize or were decreasing at a slow rate. During this current quarter, no additional CAP 18 ME<sup>TM</sup> injections have been performed. A *Revised Work Plan for Third Round of CAP 18 ME<sup>TM</sup> Injections* dated July 22, 2011, was approved by IDEM on August 22, 2011. Subsequent to the submittal of the report, however, data collected with the additional delineation in the area identified additional pockets of source material, therefore requiring the footprint of injection to be expanded. This third injection event was delayed by IDEM pending receipt and review of results from the 2011 delineation and investigation activities in the area. On May 2, 2012, MUNDELL submitted a revised injection plan that adds a few more injection locations. Currently, MUNDELL is awaiting IDEM's review and approval of investigation results, and desires to proceed with the third CAP 18 ME<sup>TM</sup> injection event at the Site as soon as possible.

The cumulative groundwater analytical data for enhanced anaerobic bioremediation are included in **Table 4**. Groundwater analytical results are attached in **Appendix A**.

### **Indicator Chemical Trends**

A group of monitoring wells from the sampling network is utilized to monitor dissolved indicator compound concentration trends over time at various locations within the heart of the three **Chemical Source Areas**. Graphs of historical PCE, TCE, cis-1,2-DCE and vinyl chloride concentrations are presented in **Figure 6** for the following monitoring wells:

**Source Area A:** MMW-P-02, MMW-P-03S, MMW-P-03D, MMW-P-04, MMW-P-11S, MMW-P-11DR, and MMW-C-01;

**Source Area B:** MMW-P-01, MMW-P-05, MMW-P-06, MMW-P-07, MMW-P-08, MMW-P-10S, MMW-P-10D, MMW-8S; MMW-P-12S, and MMW-P-12D; and

**Source Area C:** MMW-1S, MMW-9S, and MMW-10S.

**Figures 6** and **7** illustrate the changes in the chlorinated solvent concentrations demonstrating reductive dechlorination as a result of the CAP 18 ME™ remediation implementation. To illustrate the effect of the CAP 18 ME™ injections on dissolved chlorinated concentrations, injection dates are included on the graphs.

#### **2.3.1 Source Area A**

##### **PCE**

The data associated with well MMW-P-11S shows that PCE concentrations in exceedance of the RISC IDCL are present south-southwest of the strip mall property in the shallow zone. PCE was detected above the RDCL in MMW-P-02 and MMW-C-01. PCE was not detected above the laboratory reporting limit in indicator wells MMW-P-03S, MW-P-03D, and MMW-P-04 located near **Source Area A**. To the southeast of the source area, PCE concentrations which had been generally declining since the initial August 2007 CAP 18™ injections and the following February 2009 CAP 18 ME™ injections currently indicate rebounding due to its return in MMW-C-01.

##### **TCE**

TCE was not detected above the laboratory reporting limit in **Source Area A** indicator wells.

##### **Cis-1,2-DCE**

Cis-1,2-DCE concentrations decreased in MMW-P-02, MMW-P-03S, MMW-P-11S, MMW-P-11DR, and MMW-C-01. It was not detected in shallow well MMW-P-04 or deep well MMW-P-03D.

**VC**

VC concentrations increased in **Source Area A** indicator wells MMW-P-02 and MMW-P-11S and MMW-P-11DR. VC levels have decreased in MMW-P-03S, MMW-P-03D, MMW-P-04, and MMW-C-01.

While MNA Indicator parameters indicating reducing conditions have been established over the years with associated sulfate reduction, increased ethene generation, and apparent methanogenesis (e.g., MMW-P-03S, MMW-P-03D), decreasing trends are noted between the third and fourth quarter 2012.

Generation of both cis-1,2-DCE and vinyl chloride as byproducts of PCE reductive dechlorination appears to have slowed near **Source Area A** over the last several quarters. Also, the expanding footprint of PCE in the area appears to confirm that the reductive dechlorination processes are waning in the area and that an additional injection is required to re-establish effective dechlorination conditions.

### **2.3.2 Source Area B**

**PCE**

PCE concentrations remain at levels above the RISC RDCL in the vicinity of MMW-P-01, located immediately downgradient of sewer line source areas identified during soil investigation activities completed during 2005. PCE was also detected in MMW-8S at a concentration slightly above the RISC RDCL. PCE was not detected in any of the other wells in **Source Area B**, although elevated reporting limits were required for PCE in MMW-P-06 associated with elevated concentrations of cis-1,2-DCE and VC that were detected in the sample.

**TCE**

TCE concentrations increased slightly and remain at levels above the RDCL at MMW-P-01. TCE was not detected in any of the other wells in **Source Area B**.

**Cis-1,2-DCE**

Elevated cis-1,2-DCE levels in exceedance of the RISC IDCL are identified in MMW-P-06. Elevated cis-1,2-DCE levels in exceedance of the RISC RDCL are identified in the MMW-P-12S/D well pair. Levels increased in MMW-P-01 and continue to exceed the RISC IDCL. Cis-1,2-DCE levels increased in MMW-P-07 and decreased in MMW-8S and MMW-P-08, at levels below the RISC RDCL.

**VC**

Elevated VC levels in exceedance of the RISC IDCL are identified in each indicator well. Increasing trends are noted in MMW-P-01, MMW-P-07, MMW-P-10D, MMW-P-12S, and MMW-P-12D. Decreasing trends are noted in MMW-8S, MMW-P-05, MMW-P-06, MMW-P-08, and MMW-P-10S.

Indicator compound concentration trends in the vicinity of **Source Area B** indicate that in certain areas (e.g., MMW-P-07) reductive dechlorination processes have consumed PCE and TCE while generating daughter products (cis-1,2 DCE, VC) in the saturated zone. MNA Indicator parameters also indicate reducing conditions have been established over the years and sulfate reduction and methanogenesis are occurring (e.g., MMW-8S). However, there are some areas where stagnation now appears to be occurring (e.g., in MMW-P-01, MMW-P-05, MMW-P-06, AND MMW-P-10D).

### **2.3.3 Source Area C**

**PCE**

PCE concentration increased noticeably in indicator well MMW-1S and remains above the IDCL. PCE levels in MMW-9S and MMW-10S increased and are above the RDCL.

**TCE**

The TCE concentration at MMW-1S remained in exceedance of the RISC RDCL. Additionally, the TCE footprint has rebounded since the third quarter 2012 sampling event and now encompasses MMW-9S and MMW-10S at levels above the RDCL.

**Cis-1,2-DCE**

Cis-1,2-DCE was reported at concentrations above the IDCL in MMW-9S and above the RDCL in MMW-10S, reversing a declining trend that has been observed over the past several quarters. It was detected slightly above the laboratory reporting limit in MMW-1S.

**VC**

VC concentrations at **Source Area C** indicator well locations MMW-9S and MMW-10S increased and remain above the IDCL, but decreased to levels below the reporting limit at MMW-1S.

MNA Indicator parameters also indicate reducing conditions have been established over the years with associated sulfate reduction, ethene generation, and apparent methanogenesis. (e.g., see MMW-9S and MMW-10S). However, rates of ethene generation are slowing. Also noted are decreasing levels of lactic acid in these wells, suggesting that the fermented material in the area provided by the carbon substrate is decreasing, which in turn suggests available hydrogen for reductive dechlorination processes to continue may be decreasing.

The increasing PCE and TCE concentrations observed near **Source Area C**, and the decreasing rates of daughter product generation observed in the vicinity during 2011 and 2012 indicate the need for a third CAP18 ME™ injection event. This booster injection event has previously been approved by IDEM. However, a modified injection plan has been submitted under separate cover for IDEM review and is currently awaiting approval.

In conclusion, because reductive dechlorination processes appear to have slowed over the last several quarters, as evidenced by rebounding PCE and TCE concentrations and reduced generation of breakdown products (cis-1,2-DCE and vinyl chloride) in selected locations, additional CAP18 ME™ injections in **Source Areas A, B and C** have previously been approved by IDEM. In May 2012, MUNDELL submitted a revised injection plan that adds a few more injection locations and is currently waiting for IDEM approval to proceed. After approval by IDEM, MUNDELL will proceed with the third CAP 18 ME™ injection event at the Site.

The cumulative groundwater analytical data for enhanced anaerobic bioremediation are included in **Table 4**. Groundwater analytical results are attached in **Appendix A**.

## 2.4 Indoor Air Mitigation Systems Performance

Four sub-floor slab depressurization units were installed by *Air Quality Control* (AQC) under the oversight of MUNDELL in September 2006. Three additional sub-floor slab depressurization units were installed by AQC under the oversight of MUNDELL on March 19 and 26, 2008.

Unit/blowers were installed in the following spaces at Michigan Plaza: 1) the Village Pantry (B1); 2) the former Tire Shop space (B2); 3) the Arca de Salvacion (B3); and 4) the laundromat (Michigan Plaza Family Laundry) (B4). The systems installed at the Maple Creek Village Apartments are: Building No. 1, Basement Apartment 101 (B5); Building No. 6, Basement Apartment 602 (B6); and Building No. 10, Basement Apartment 1001 (B7). The system locations are illustrated on **Figure 8**.

Since the time of installation, system stack air samples were collected weekly during October 2006, followed by bi-weekly sampling during November and December 2006,

monthly throughout 4<sup>th</sup> quarter, 2006, and then on a quarterly basis thereafter. PID readings have also been concurrently measured in each of the stacks. The historical PCE concentration trends and cumulative pounds of PCE and total contaminants removed by each of the systems (B1 through B7) are summarized in **Figures 9 through 17**.

As of the end of the 4<sup>th</sup> quarter of 2012, approximately 27.40 pounds of total chlorinated solvents, including 17.18 pounds of PCE, have been removed at the *Maple Creek Village Apartments* property (subfloor depressurization systems B5, B6 and B7); and approximately 114.23 pounds of total chlorinated solvents, including 99.58 pounds of PCE, have been removed at the *Michigan Plaza* property (subfloor depressurization systems B1, B2, B3 and B4). The associated calculations are provided in **Appendix B**. A concentration of half the PQL (practical quantitation limit) is assumed for the indicator compounds demonstrating concentrations below the laboratory PQL, with the exception of vinyl chloride where an average concentration of 0.015 parts per million vapor (PPMV) (derived from the J flag values for vinyl chloride concentrations below PQL) is used for calculation purposes.

Overall, decreases in PCE concentrations have been noted in all mitigation systems going back to at least May 2009, although PCE concentrations in B1 (Unit 3801), B2 (Unit 3811), and B3 (Unit 3819) have steadily increased since January 2012. PCE concentrations in mitigation system B4 has decreased by an order of magnitude since air monitoring was initiated. Air mitigation systems B1, B2, B3, B5, and B6 have also shown generally declining PCE concentrations, with reduction of PCE concentrations by approximately 500 to 5000 ug/m<sup>3</sup> since air monitoring was initiated.

### 3.0 FUTURE ACTIONS

MUNDELL will continue to conduct groundwater monitoring at the Site and provide results to IDEM on a quarterly basis. Given the data reported above, MUNDELL recommends that the previously proposed CAP18 injections proceed as soon as possible. MUNDELL is concerned that further delay of this third injection event will prolong the time to complete cleanup.

In addition, MUNDELL remains concerned about the Genuine Parts contamination that continues to migrate onto the Site. As set forth in Section 2.2.2, multiple monitoring wells upgradient of the Maple Creek Village and Michigan Plaza properties show VOC concentrations at levels in excess of residential and commercial standards. Based on a review of the March 2012 ENVIRON report, VRP Tier II cleanup levels were established at the Genuine Parts site based upon the presumption that cleanup to Residential Cleanup Goals (RCGs) was not likely because of the presence of off-site sources (interpreted to mean source areas associated with Michigan Plaza). MUNDELL points out that source areas associated with Michigan Plaza are located well to the south of the property boundary of the Genuine Parts facility. Accordingly, there appears to be no reason why

Genuine Parts could not achieve RCGs at the aforementioned wells. Nevertheless, if IDEM is not going to require a more thorough remedial response for the remaining groundwater impacts migrating from Genuine Parts onto the Maple Creek Village property, concentrations coming onto the Maple Creek Village and passing into the remedial area for Michigan Plaza (e.g., in upgradient wells MMW-11D, MMW-13D, MMW-14D, MW-165D, MW-166D, MMW-4D and MMW-5D) will be used as ‘background concentrations’ that will aid in distinguishing between the Michigan Plaza source impacts and the Genuine Site impacts, and ultimately be used to support the setting of target cleanup goals for the deeper portion of the surficial aquifer at the Michigan Plaza site.

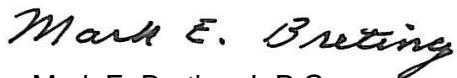
We appreciate the opportunity to update IDEM on the progress of remedial activities and monitoring at the Site. If you have any questions, please do not hesitate to contact us at (317) 630-9060 or via email ([jmundell@MundellAssociates.com](mailto:jmundell@MundellAssociates.com); [breting@mundellassociates.com](mailto:breting@mundellassociates.com)).

Sincerely,

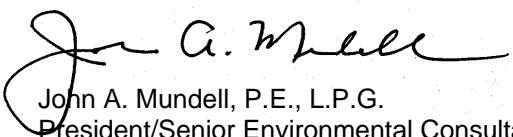
**MUNDELL & ASSOCIATES, INC.**



Matthew Bono  
Staff Environmental Scientist



Mark E. Breting, L.P.G.  
Senior Project Geologist



John A. Mundell, P.E., L.P.G.  
President/Senior Environmental Consultant

Attachments:      Tables  
                        Figures  
                        Appendices

cc:                Mr. Peter Cappel, AMMH

## **TABLES**

- |         |   |
|---------|---|
| Table 1 | Groundwater Level Measurements  |
| Table 2 | Monitoring Well Groundwater Analytical Results – 4 <sup>th</sup> Quarter 2012 |
| Table 3 | Cumulative Monitoring Well Groundwater Analytical Results                     |
| Table 4 | Cumulative Groundwater Analytical Data for Enhanced Anaerobic Bioremediation  |

**Table 1**  
 Tabulated Water Level Measurements and Monitoring Well Construction Data  
 Quarter 4 - 2012  
 Michigan Plaza  
 3801-3823 West Michigan Street  
 Indianapolis, Indiana  
 MUNDELL Project No.: M01046

Monitoring Well	Date of Water Level	Top of Casing Elevation (feet MSL)	Total Depth (feet)	Screened Interval (feet)		Depth To Water (feet)	Groundwater Elevation (feet MSL)		
<b>Monitoring Wells (Plaza)</b>									
<i>Shallow Wells</i>									
MMW-P-01	11/12/2012	715.26	28	18.00	-	28.00	19.04		
MMW-P-02	11/12/2012	716.09	30	20.00	-	30.00	20.11		
MMW-P-03S	11/12/2012	715.95	28	18.00	-	28.00	19.98		
MMW-P-04	11/12/2012	716.04	28	18.00	-	28.00	19.86		
MMW-P-05	11/12/2012	715.55	28	18.00	-	28.00	19.41		
MMW-P-06	11/12/2012	716.14	28	18.00	-	28.00	20.02		
MMW-P-07	11/12/2012	714.90	28	18.00	-	28.00	18.31		
MMW-P-08	11/12/2012	714.53	28	18.00	-	28.00	17.93		
MMW-P-09S	11/12/2012	714.80	28	18.00	-	28.00	19.90		
MMW-P-10S	11/12/2012	714.35	28	18.00	-	28.00	17.48		
MMW-P-12S	11/12/2012	715.83	26	16.00	-	26.00	18.71		
<i>Deep Wells</i>									
MMW-P-03D	11/12/2012	716.02	35	25.00	-	35.00	19.99		
MMW-P-09D	11/12/2012	714.82	45	35.00	-	45.00	19.83		
MMW-P-10D	11/12/2012	714.42	38	28.00	-	38.00	17.86		
MMW-P-12D	11/12/2012	715.33	36.5	31.50	-	36.50	18.11		
<b>Monitoring Wells (Apartments)</b>									
<i>Shallow Wells</i>									
MMW-1S	11/12/2012	712.92	20	10.00	-	20.00	15.91		
MMW-2S	11/12/2012	712.95	20	10.00	-	20.00	NG		
MMW-3S	11/12/2012	710.20	30	18.00	-	28.00	11.71		
MMW-7S	11/12/2012	712.09	26	12.00	-	22.00	13.63		
MMW-8S	11/12/2012	714.24	24	14.00	-	24.00	16.92		
MMW-9S	11/12/2012	713.71	25	15.00	-	25.00	16.79		
MMW-10S	11/12/2012	712.69	25	15.00	-	25.00	15.78		
MMW-11S	11/12/2012	713.17	24	14.00	-	24.00	16.04		
MMW-12S	11/12/2012	712.15	24	14.00	-	24.00	15.06		
MMW-15S	11/12/2012	713.36	32	22.00	-	32.00	15.93		
<i>Deep Wells</i>									
MMW-4D	11/12/2012	711.29	66	56.00	-	66.00	13.43		
MMW-5D	11/12/2012	711.27	51	36.00	-	41.00	12.84		
MMW-6D	11/12/2012	712.40	51	39.00	-	49.00	14.05		
MMW-11D	11/12/2012	713.33	33	23.00	-	33.00	15.87		
MMW-13D	11/12/2012	713.28	50	35.00	-	50.00	15.88		
MMW-14D	11/12/2012	712.41	50	40.00	-	50.00	14.75		
MMW-15D	11/12/2012	713.08	39	34.00	-	39.00	15.65		
<b>Floral Park Cemetery Monitoring Wells (Off-Site)</b>									
<i>Shallow Wells</i>									
MMW-C-01	11/12/2012	715.73	28	18.00	-	28.00	19.71		
MMW-C-02S	11/12/2012	714.80	28	18.00	-	28.00	19.21		
MMW-C-16S	11/12/2012	717.32					21.65		
MMW-P-11S	11/12/2012	716.42	26	16.00	-	26.00	20.51		
MMW-P-13S	11/12/2012	713.83	26	16.00	-	26.00	17.94		
MMW-P-14S	11/12/2012	714.50	28	18.00	-	28.00	18.93		
<i>Deep Wells</i>									
MMW-C-02D	11/12/2012	713.90	36	31.00	-	36.00	18.42		
MMW-C-16D	11/12/2012	717.27					21.64		
MMW-C-17D	11/12/2012	714.57					20.43		
MMW-P-11DR	11/12/2012	715.63	33	28.00	-	33.00	19.73		
MMW-P-13D	11/12/2012	713.57	33	28.00	-	33.00	17.70		
MMW-P-14D	11/12/2012	714.76	34	29.00	-	34.00	19.19		

**Table 1**  
 Tabulated Water Level Measurements and Monitoring Well Construction Data  
 Quarter 4 - 2012  
 Michigan Plaza  
 3801-3823 West Michigan Street  
 Indianapolis, Indiana  
 MUNDELL Project No.: M01046

Monitoring Well	Date of Water Level	Top of Casing Elevation (feet MSL)	Total Depth (feet)	Screened Interval (feet)		Depth To Water (feet)	Groundwater Elevation (feet MSL)		
<b>ENVIRON Monitoring Wells (Off-Site)</b>									
<i>Shallow Wells</i>									
MW-166S	11/12/2012	712.70	20	10.00	20.00	14.89	697.81		
MW-167S	11/12/2012	716.07	22	12.00	-	22.00	697.37		
MW-168S	11/12/2012	714.58	22	12.00	-	22.00	696.97		
MW-169S	11/12/2012	715.92	25	15.00	-	25.00	695.52		
MW-170S	11/12/2012	717.14	27	17.00	-	27.00	696.06		
MW-171S	11/12/2012	711.58	22	12.00	-	22.00	695.99		
MW-174S	11/12/2012	717.78	24	14.00	24.00	20.80	696.98		
MW-175S	11/12/2012	718.66	25	15.00	25.00	21.33	697.33		
<i>Deep Wells</i>									
MW-166D	11/12/2012	712.49	51	46.00	51.00	14.64	697.85		
MW-167D	11/12/2012	715.61	33	28.00	-	33.00	697.34		
MW-168D	11/12/2012	714.46	31	26.00	-	31.00	697.01		
MW-169D	11/12/2012	715.69	37	32.00	-	37.00	695.50		
MW-170D	11/12/2012	717.07	39	34.00	-	39.00	696.06		
MW-171D	11/12/2012	711.62	49	44.00	-	49.00	695.51		
MW-174D	11/12/2012	717.72	48	43.00	48.00	20.74	696.98		
MW-175D	11/12/2012	718.75	41	37.00	42.00	21.46	697.29		
<b>U.S. EPA Monitoring Wells (Off-Site)</b>									
<i>Shallow Wells</i>									
MW-WES-01a	11/12/2012	716.30	37.5	32.5	37.5	13.79	702.51		
MW-WES-02a	11/12/2012	716.60	29	24	29	19.75	696.85		
MW-WES-03a	11/12/2012	717.68	35	30	35	22.09	695.59		
MW-WES-04a	11/12/2012	718.14	35	30	35	21.03	697.11		
MW-WES-05a	11/12/2012	717.19	25	20	25	18.75	698.44		
<i>Intermediate/Deep Wells</i>									
MW-WES-01b	11/12/2012	716.31	46	41	46	20.16	696.15		
MW-WES-01c	11/12/2012	716.28	55	50	55	20.15	696.13		
MW-WES-02b	11/12/2012	716.60	40	35	40	20.17	696.43		
MW-WES-02c	11/12/2012	716.69	50	45	50	20.07	696.62		
MW-WES-03b	11/12/2012	717.70	45	40	45	22.25	695.45		
MW-WES-04b	11/12/2012	718.14	45	40	45	20.99	697.15		
MW-WES-05b	11/12/2012	716.97	37.5	32.5	37.5	19.39	697.58		
MW-WES-05c	11/12/2012	716.49	50	45	50	19.81	696.68		
<b>Little Eagle Creek Stream Gauge Locations</b>									
Location ID	Date of Water Level	Top of Stream Gauge Elevation (Feet MSL)				Water Surface Gauge Elevation (Feet MSL)	Water Surface Elevation (Feet MSL)		
SG-1	7/30/2012	701.78				0.26	698.04		
SG-2	NG	698.85				NG	NG		

Notes:

- 1) All Top of Casing (TOC) data was obtained from or referenced to the Unified U.S. EPA Elevation Survey completed on October 13, 2011.
- 2) NG = Not Gauged;

**Table 2**  
 Monitoring Well Groundwater Analytical Results  
 Quarter 4 - 2012  
 Michigan Plaza  
 3801-3823 West Michigan Street  
 Indianapolis, Indiana  
 MUNDELL Project No.: M01046

Well ID	Sample Date	PCE	TCE	cis-1,2-DCE	trans-1,2-DCE	Chloroform	Vinyl chloride
		ug/l	ug/l	ug/l	ug/l	ug/l	ug/l
IDEML RISC Default Industrial Cleanup Level		55	31	1,000	2,000	1,000	4
IDEML RISC Default Residential Cleanup Level		5	5	70	100	80	2
<b>Monitoring Wells (Apts)</b>							
<i>Shallow Wells</i>							
MMW-1S	11/15/2012	413	20.0	5.1	<5.0	<5.0	<2.0
MMW-2S	NS	NS	NS	NS	NS	NS	NS
MMW-3S	NS	NS	NS	NS	NS	NS	NS
MMW-7S	NS	NS	NS	NS	NS	NS	NS
MMW-8S	11/15/2012	6.8	<5.0	10.0	<5.0	<5.0	127
MMW-9S	11/14/2012	9.8	5.0	2,000	58.0	<5.0	893
MMW-10S	11/15/2012	23.0	21.7	309	13.2	<5.0	286
MMW-11S	11/13/2012	<5.0	<5.0	27.6	<5.0	<5.0	<2.0
MMW-12S	11/13/2012	<5.0	<5.0	84.3	<5.0	<5.0	5.3
MMW-15S	11/21/2012	<5.0	<5.0	<5.0	<5.0	<5.0	<2.0
<i>Deep Wells</i>							
MMW-4D	11/13/2012	<5.0	<5.0	463	<5.0	<5.0	164
MMW-5D	NS	NS	NS	NS	NS	NS	NS
MMW-6D	11/13/2012	<5.0	<5.0	<5.0	<5.0	<5.0	57.5
MMW-11D	11/13/2012	<5.0	<5.0	309	14.6	<5.0	2.9
MMW-13D	11/13/2012	<5.0	<5.0	765	<5.0	<5.0	135
MMW-14D	11/13/2012	<5.0	<5.0	1010	10.0	<5.0	105
MMW-15D	11/21/2012	<5.0	<5.0	10.6	<5.0	<5.0	<2.0

**Table 2**  
 Monitoring Well Groundwater Analytical Results  
 Quarter 4 - 2012  
 Michigan Plaza  
 3801-3823 West Michigan Street  
 Indianapolis, Indiana  
 MUNDELL Project No.: M01046

Well ID	Sample Date	PCE	TCE	cis-1,2-DCE	trans-1,2-DCE	Chloroform	Vinyl chloride
		ug/l	ug/l	ug/l	ug/l	ug/l	ug/l
IDEML RISC Default Industrial Cleanup Level		55	31	1,000	2,000	1,000	4
IDEML RISC Default Residential Cleanup Level		5	5	70	100	80	2
<b>Monitoring Wells (Plaza)</b>							
<i>Shallow Wells</i>							
MMW-P-01	11/14/2012	24.5	13.1	619	14.1	<5.0	3,060
MMW-P-02	11/14/2012	6.7	<5.0	54.0	<5.0	<5.0	803
MMW-P-03S	11/14/2012	<5.0	<5.0	12.3	<5.0	<5.0	113
MMW-P-04	11/21/2012	<5.0	<5.0	<5.0	<5.0	<5.0	<2.0
MMW-P-05	11/14/2012	<5.0	<5.0	<5.0	<5.0	<5.0	151
MMW-P-06	11/14/2012	<50.0	<50.0	4,640	<50.0	<50.0	6,170
MMW-P-07	11/14/2012	<5.0	<5.0	42.2	<5.0	<5.0	607
MMW-P-08	11/14/2012	<5.0	<5.0	18.4	<5.0	<5.0	436
MMW-P-09S	11/13/2012	<5.0	<5.0	<5.0	<5.0	<5.0	<2.0
MMW-P-10S	11/14/2012	<5.0	<5.0	<5.0	<5.0	<5.0	2.3
MMW-P-12S	11/19/2012	<5.0	<5.0	763	15.8	<5.0	76.1
<i>Deep Wells</i>							
MMW-P-03D	11/14/2012	<5.0	<5.0	<5.0	<5.0	<5.0	17.3
MMW-P-09D	11/13/2012	<5.0	<5.0	<5.0	<5.0	<5.0	61.6
MMW-P-10D	11/14/2012	<5.0	<5.0	<5.0	<5.0	<5.0	964
MMW-P-12D	11/19/2012	<5.0	<5.0	793	17.4	<5.0	91.8

**Table 2**  
 Monitoring Well Groundwater Analytical Results  
 Quarter 4 - 2012  
 Michigan Plaza  
 3801-3823 West Michigan Street  
 Indianapolis, Indiana  
 MUNDELL Project No.: M01046

Well ID	Sample Date	PCE	TCE	cis-1,2-DCE	trans-1,2-DCE	Chloroform	Vinyl chloride
		ug/l	ug/l	ug/l	ug/l	ug/l	ug/l
IDEML RISC Default Industrial Cleanup Level		55	31	1,000	2,000	1,000	4
IDEML RISC Default Residential Cleanup Level		5	5	70	100	80	2
<b>Floral Park Monitoring Wells (Off-site)</b>							
<i>Shallow Wells</i>							
MMW-C-01	11/15/2012	24.6	<5.0	10.9	<5.0	<5.0	26.7
MMW-C-02S	11/13/2012	<5.0	<5.0	<5.0	<5.0	<5.0	<2.0
MMW-C-16S	11/19/2012	<5.0	<5.0	<5.0	<5.0	<5.0	<2.0
MMW-P-11S	11/15/2012	538	<5.0	6.5	<5.0	<5.0	18.7
MMW-P-13S	11/19/2012	<5.0	<5.0	<5.0	<5.0	<5.0	3.6
MMW-P-14S	11/20/2012	<5.0	<5.0	<5.0	<5.0	<5.0	<2.0
<i>Deep Wells</i>							
MMW-C-02D	11/19/2012	<5.0	<5.0	<5.0	<5.0	<5.0	125
MMW-C-16D	11/19/2012	<5.0	<5.0	<5.0	<5.0	<5.0	349
MMW-C-17D	11/20/2012	<5.0	<5.0	<5.0	<5.0	<5.0	<2.0
MMW-P-11DR	11/15/2012	<5.0	<5.0	10.4	<5.0	<5.0	117
MMW-P-13D	11/19/2012	<5.0	<5.0	<5.0	<5.0	<5.0	154
MMW-P-14D	11/20/2012	<5.0	<5.0	<5.0	<5.0	<5.0	58.3

**Table 2**  
 Monitoring Well Groundwater Analytical Results  
 Quarter 4 - 2012  
 Michigan Plaza  
 3801-3823 West Michigan Street  
 Indianapolis, Indiana  
 MUNDELL Project No.: M01046

Well ID	Sample Date	PCE	TCE	cis-1,2-DCE	trans-1,2-DCE	Chloroform	Vinyl chloride
		ug/l	ug/l	ug/l	ug/l	ug/l	ug/l
IDEML RISC Default Industrial Cleanup Level		55	31	1,000	2,000	1,000	4
IDEML RISC Default Residential Cleanup Level		5	5	70	100	80	2
<b>Keramida/ENVIRON Monitoring Wells (Off-Site)</b>							
<i>Shallow Wells</i>							
MW-167S	NS	NS	NS	NS	NS	NS	NS
MW-168S	NS	NS	NS	NS	NS	NS	NS
MW-169S	NS	NS	NS	NS	NS	NS	NS
MW-170S	11/16/2012	<5.0	<5.0	6.1	<5.0	<5.0	<2.0
MW-171S	NS	NS	NS	NS	NS	NS	NS
<i>Deep Wells</i>							
MW-167D	11/16/2012	<5.0	<5.0	480	19.9	<5.0	9.2
MW-168D	11/16/2012	<5.0	<5.0	6.9	<5.0	<5.0	81.3
MW-169D	NS	NS	NS	NS	NS	NS	NS
MW-170D	11/16/2012	<5.0	<5.0	<5.0	<5.0	<5.0	62.8
MW-171D	NS	NS	NS	NS	NS	NS	NS

Notes:

Exceedances of IDEM RISC Industrial Default Cleanup Level in **RED**

Exceedances of IDEM RISC Residential Default Cleanup Level in **BLUE**

PCE = Tetrachloroethene; TCE = Trichloroethene; cis-1,2-DCE = cis-1,2-Dichloroethene; trans-1,2-DCE = trans-1,2-Dichloroethene

NS = Not Sampled

NA = Not Analyzed

All analytical results presented in micrograms per liter (ug/L).

**Table 3**  
**Cumulative Monitoring Well Groundwater Analytical Results**  
**Quarter 4 - 2012**  
**Michigan Plaza**  
**3801-3823 West Michigan Street**  
**Indianapolis, Indiana**  
**MUNDELL Project No.: M01046**

Well ID	Sample Date	PCE	TCE	cis-1,2-DCE	trans-1,2-DCE	Chloroform	Vinyl chloride
		ug/l	ug/l	ug/l	ug/l	ug/l	ug/l
IDEM RISC Industrial Default Cleanup Level - 2006		55	31	1,000	2,000	1,000	4
IDEM RISC Residential Default Cleanup Level - 2006		5	5	70	100	80	2
<b>Monitoring Wells (Apts)</b>							
<i>Shallow Wells</i>							
MMW-1S	9/10/2004	< 5.0	< 5.0	< 5.0	< 5.0	<5.0	4.1
	3/15/2005	150	10.0	< 5.0	< 5.0	< 5.0	< 2.0
	11/9/2005	130	8.3	<5.0	<5.0	<5.0	8.9
	9/5/2006	200	13.0	<5.0	<5.0	<5.0	4.6
	2/22/2007	220	14.9	<5.0	<5.0	<5.0	<2.0
	6/14/2007	240	<5.0	<5.0	<5.0	<5.0	<2.0
	9/19/2007	362	10.5	<5.0	<5.0	31.6	<2.0
	12/13/2007	330	8.1	<5.0	<5.0	27.0	<2.0
	3/21/2008	280	14.0	<5.0	<5.0	<5.0	<2.0
	6/6/2008	277	13.2	<5.0	<5.0	<5.0	<2.0
	9/11/2008	288	14.7	<5.0	<5.0	<5.0	<2.0
	11/20/2008	223	45.5	169	<5.0	<5.0	14.5
	3/16/2009	199	11.3	<5.0	<5.0	<5.0	<2.0
	6/16/2009	237	13.4	<5.0	<5.0	<5.0	<2.0
	8/5/2009	195	22.9	71.3	<5.0	<5.0	9.3
	11/2/2009	189	39.0	119	<5.0	<5.0	26.6
	2/3/2010	160	49.7	59.1	<5.0	<5.0	35.4
	4/22/2010	206	14.7	<5.0	<5.0	<5.0	<2.0
	7/21/2010	310	21.8	<5.0	<5.0	<5.0	<2.0
	10/12/2010	89.4	21.3	208	<5.0	<5.0	32.2
	1/19/2011	217	46.2	35.4	<5.0	<5.0	21.8
	5/4/2011	449	22.7	12.1	<5.0	<5.0	<2.0
	7/28/2011	334	20.3	8.1	<5.0	<5.0	2.1
	10/19/2011	136	66.0	75.3	<5.0	<5.0	14.3
	2/14/2012	219	9.7	<5.0	<5.0	<5.0	<2.0
	4/25/2012	270	11.2	34.2	<5.0	<5.0	39.0
	8/2/2012	292	27.9	<5.0	<5.0	<5.0	28.5
	11/15/2012	413	20.0	5.1	<5.0	<5.0	<2.0
MMW-2S	9/10/2004	<5.0	<5.0	<5.0	<5.0	<5.0	<2.0
	11/9/2005	<5.0	<5.0	<5.0	<5.0	<5.0	5.2
	9/5/2006	<5.0	<5.0	<5.0	<5.0	<5.0	5.2
	2/22/2007	<5.0	<5.0	<5.0	<5.0	<5.0	<2.0
	6/2/2008	<5.0	<5.0	<5.0	<5.0	<5.0	<2.0
	6/15/2009	<5.0	<5.0	<5.0	<5.0	<5.0	<2.0
	4/22/2010	<5.0	<5.0	<5.0	<5.0	<5.0	<2.0
	4/30/2011	<5.0	<5.0	<5.0	<5.0	<5.0	<2.0
	4/23/2012	<5.0	<5.0	<5.0	<5.0	<5.0	<2.0
MMW-3S	8/26/2004	<5.0	<5.0	<5.0	<5.0	<5.0	<2.0
	9/10/2004	<5.0	5.2	<5.0	<5.0	<5.0	<2.0
	11/9/2005	<5.0	28.0	5.4	<5.0	<5.0	<2.0
	9/5/2006	<5.0	23.0	7.4	<5.0	<5.0	<2.0
	2/22/2007	<5.0	20.6	8.5	<5.0	<5.0	<2.0
	6/2/2008	<5.0	20.2	7.9	<5.0	<5.0	2.8
	6/15/2009	<5.0	15.3	11.7	<5.0	<5.0	3.0
	4/20/2010	<5.0	15.9	8.0	<5.0	<5.0	<2.0
	5/4/2011	<5.0	12.4	12.4	<5.0	<5.0	4.4
	4/23/2012	<5.0	9.9	5.8	<5.0	<5.0	<2.0
MMW-7S	8/24/2004	<5.0	<5.0	28.0	<5.0	<5.0	<2.0
	9/10/2004	<5.0	<5.0	8.5	<5.0	<5.0	<2.0
	11/9/2005	<5.0	<5.0	9.5	<5.0	<5.0	<2.0
	9/5/2006	<5.0	<5.0	5.8	<5.0	<5.0	4.5
	2/21/2007	<5.0	<5.0	<5.0	<5.0	<5.0	<2.0
	6/2/2008	<5.0	<5.0	<5.0	<5.0	<5.0	<2.0
	6/15/2009	<5.0	<5.0	<5.0	<5.0	<5.0	<2.0
	4/20/2010	<5.0	<5.0	<5.0	<5.0	<5.0	<2.0
	5/4/2011	<5.0	<5.0	<5.0	<5.0	<5.0	<2.0
	4/26/2012	<5.0	<5.0	<5.0	<5.0	<5.0	<2.0

**Table 3**  
 Cumulative Monitoring Well Groundwater Analytical Results  
 Quarter 4 - 2012  
 Michigan Plaza  
 3801-3823 West Michigan Street  
 Indianapolis, Indiana  
 MUNDELL Project No.: M01046

Well ID	Sample Date	PCE	TCE	cis-1,2-DCE	trans-1,2-DCE	Chloroform	Vinyl chloride
		ug/l	ug/l	ug/l	ug/l	ug/l	ug/l
IDEM RISC Industrial Default Cleanup Level - 2006		55	31	1,000	2,000	1,000	4
IDEM RISC Residential Default Cleanup Level - 2006		5	5	70	100	80	2
MMW-8S	2/22/2007	114	<5.0	289	13.8	<5.0	40.6
	6/14/2007	15.9	<5.0	364	9.5	<5.0	82.1
	9/19/2007	<5.0	<5.0	778	24.6	<5.0	145
	12/13/2007	7.7	<5.0	1,000	7.4	<5.0	586
	3/20/2008	<5.0	<5.0	470	<5.0	<5.0	330
	6/6/2008	<5.0	<5.0	336	<5.0	<5.0	509
	9/10/2008	<5.0	<5.0	275	<5.0	<5.0	322
	11/20/2008	<5.0	<5.0	123	<5.0	<5.0	584
	3/16/2009	<5.0	<5.0	95.0	<5.0	<5.0	348
	6/16/2009	<5.0	<5.0	94.3	6.1	<5.0	280
	8/5/2009	<5.0	<5.0	83.8	<5.0	<5.0	261
	11/2/2009	<5.0	<5.0	58.3	<5.0	<5.0	277
	2/3/2010	7.9	<5.0	15.3	<5.0	<5.0	236
	4/22/2010	<5.0	<5.0	9.0	<5.0	<5.0	151
	7/21/2010	6.2	<5.0	14.9	<5.0	5.0	230
	10/12/2010	8.4	<5.0	5.4	<5.0	<5.0	158
	1/19/2011	14.1	<5.0	<5.0	<5.0	<5.0	172
	4/30/2011	677	19.5	37.2	<5.0	<5.0	108
	7/28/2011	19.4	<5.0	29.0	<5.0	<5.0	130
	10/24/2011	7.9	<5.0	9.9	<5.0	<5.0	200
	2/14/2012	<5.0	<5.0	12.6	<5.0	<5.0	148
	4/25/2012	<5.0	<5.0	15.6	<5.0	<5.0	90.6
	8/2/2012	5.1	<5.0	8.5	<5.0	<5.0	139
	11/15/2012	6.8	<5.0	10.0	<5.0	<5.0	127
MMW-9S	2/22/2007	782	88.6	78.9	<5.0	<5.0	<2.0
	6/14/2007	858	85.7	65.3	<5.0	<5.0	<2.0
	9/20/2007	1,430	112	70.3	8.2	<5.0	<2.0
	12/12/2007	<50.0	<50.0	1,700	<50.0	<50.0	<20.0
	3/21/2008	57.0	20.0	2,900	39.0	<5.0	16.0
	6/6/2008	52.9	28.0	1,540	38.2	<5.0	295
	9/10/2008	52.6	22.7	4,920	94.5	<5.0	167
	11/20/2008	<5.0	<5.0	5,820	90.2	<5.0	1,010
	3/16/2009	<50.0	<50.0	7,490	73.8	<50.0	1,800
	6/16/2009	44.5	24.9	4,810	64.0	<5.0	876
	8/5/2009	<5.0	<5.0	5,010	64.2	<5.0	1,110
	11/2/2009	<5.0	<5.0	5,410	120	<5.0	1,050
	2/3/2010	<50.0	<50.0	5,090	98.4	<50.0	1,700
	4/22/2010	<5.0	<5.0	4,300	77.1	<5.0	1,710
	7/21/2010	<50.0	<50.0	2,910	73.2	<50.0	2,020
	10/12/2010	<50.0	<50.0	2,430	<50.0	<50.0	1,270
	1/19/2011	<50.0	<50.0	1,580	136	<50.0	1,490
	5/4/2011	11.1	13.4	2,900	71.7	<5.0	1,350
	7/27/2011	<5.0	<5.0	933	32.0	<5.0	747
	10/24/2011	<5.0	<5.0	2,330	92.8	<5.0	694
	2/14/2012	<25.0	<25.0	2,040	60.8	<25.0	1,140
	4/25/2012	<5.0	<5.0	1,180	30.1	<5.0	753
	8/2/2012	<5.0	<5.0	667	30.2	<5.0	667
	11/14/2012	9.8	5.0	2000	58.0	<5.0	893

**Table 3**  
**Cumulative Monitoring Well Groundwater Analytical Results**  
**Quarter 4 - 2012**  
**Michigan Plaza**  
**3801-3823 West Michigan Street**  
**Indianapolis, Indiana**  
**MUNDELL Project No.: M01046**

Well ID	Sample Date	PCE	TCE	cis-1,2-DCE	trans-1,2-DCE	Chloroform	Vinyl chloride
		ug/l	ug/l	ug/l	ug/l	ug/l	ug/l
IDEM RISC Industrial Default Cleanup Level - 2006		55	31	1,000	2,000	1,000	4
IDEM RISC Residential Default Cleanup Level - 2006		5	5	70	100	80	2
MMW-10S	2/22/2007	49.6	<5.0	<5.0	<5.0	<5.0	<2.0
	6/14/2007	77.6	<5.0	<5.0	<5.0	<5.0	<2.0
	9/19/2007	66.0	<5.0	<5.0	<5.0	<5.0	<2.0
	12/12/2007	124	56.0	149	<5.0	<5.0	<2.0
	3/21/2008	440	12.0	8.1	<5.0	<5.0	12.0
	6/6/2008	541	62.1	218	<5.0	<5.0	30.4
	9/10/2008	6.9	<5.0	353	8.2	<5.0	<2.0
	11/20/2008	<5.0	<5.0	212	<5.0	<5.0	15.9
	3/16/2009	<5.0	<5.0	302	<5.0	<5.0	114
	6/16/2009	22.8	15.4	415	12.0	<5.0	81.4
	8/5/2009	<5.0	<5.0	224	5.5	<5.0	156
	11/2/2009	12.8	10.1	239	5.6	<5.0	119
	2/3/2010	8.3	7.5	180	5.1	<5.0	148
	4/22/2010	<5.0	7.9	165	<5.0	<5.0	143
	7/21/2010	15.6	9.7	267	8.3	<5.0	239
	10/12/2010	<5.0	<5.0	100	<5.0	<5.0	96.1
	1/19/2011	<5.0	14.4	80.9	12.7	<5.0	88.0
	5/4/2011	429	76.6	464	16.9	<5.0	130
	7/27/2011	24.5	14.3	206	7.2	<5.0	295
	10/19/2011	5.2	<5.0	134	<5.0	<5.0	198
	2/14/2012	35.0	21.6	357	6.7	<5.0	265
	4/24/2012	54.0	23.8	194	6.1	<5.0	196
	8/2/2012	<5.0	<5.0	111	<5.0	<5.0	256
	11/15/2012	23.0	21.7	309	13.2	<5.0	286
MMW-11S	6/14/2007	<5.0	<5.0	225	6.8	<5.0	18.6
	9/19/2007	<5.0	<5.0	442	21.1	<5.0	30.1
	12/13/2007	7.2	<5.0	920	27.0	<5.0	49.0
	3/20/2008	<5.0	<5.0	420	17.0	<5.0	4.9
	6/5/2008	<5.0	<5.0	623	23.1	<5.0	26.7
	9/10/2008	<5.0	<5.0	327	18.3	<5.0	9.9
	11/20/2008	<5.0	<5.0	554	23.9	<5.0	18.5
	3/16/2009	<5.0	<5.0	37.6	<5.0	<5.0	<2.0
	6/16/2009	<5.0	<5.0	253	17.9	<5.0	2.8
	8/5/2009	<5.0	<5.0	80.7	5.5	<5.0	3.1
	11/2/2009	<5.0	<5.0	59.9	<5.0	<5.0	<2.0
	2/3/2010	<5.0	<5.0	29.4	<5.0	<5.0	<2.0
	4/22/2010	<5.0	<5.0	17.7	<5.0	<5.0	<2.0
	7/21/2010	<5.0	<5.0	120	7.4	<5.0	4.3
	10/12/2010	<5.0	<5.0	85.1	5.6	<5.0	<2.0
	1/19/2011	<5.0	<5.0	46.3	12.9	<5.0	<2.0
	4/30/2011	<5.0	<5.0	8.3	<5.0	<5.0	<2.0
	7/26/2011	<5.0	<5.0	15.1	<5.0	<5.0	<2.0
	10/21/2011	<5.0	<5.0	33.9	<5.0	<5.0	<2.0
	2/14/2012	<5.0	<5.0	5.4	<5.0	<5.0	<2.0
	4/24/2012	<5.0	<5.0	42.5	5.1	<5.0	<2.0
	7/31/2012	<5.0	<5.0	62.7	5.4	<5.0	<2.0
	11/13/2012	<5.0	<5.0	27.6	<5.0	<5.0	<2.0
MMW-12S	6/16/2009	<5.0	<5.0	9.7	<5.0	<5.0	6.5
	8/5/2009	<5.0	<5.0	47.3	<5.0	<5.0	15.2
	11/2/2009	<5.0	<5.0	28.8	<5.0	<5.0	7.1
	2/3/2010	<5.0	<5.0	11.4	<5.0	<5.0	2.1
	4/20/2010	<5.0	<5.0	5.3	<5.0	<5.0	<2.0
	7/21/2010	<5.0	<5.0	25.4	<5.0	<5.0	7.3
	10/12/2010	<5.0	<5.0	16.8	<5.0	<5.0	<2.0
	1/18/2011	<5.0	<5.0	19.7	<5.0	<5.0	<2.0
	4/30/2011	<5.0	<5.0	30.6	<5.0	<5.0	2.7
	7/26/2011	<5.0	<5.0	24.3	<5.0	<5.0	<2.0
	10/18/2011	<5.0	<5.0	39.4	<5.0	<5.0	<2.0
	2/14/2012	<5.0	<5.0	24.0	<5.0	<5.0	<2.0
	4/23/2012	<5.0	<5.0	45.2	<5.0	<5.0	2.6
	7/31/2012	<5.0	<5.0	46.9	<5.0	<5.0	3.0
	11/13/2012	<5.0	<5.0	84.3	<5.0	<5.0	5.3

**Table 3**  
**Cumulative Monitoring Well Groundwater Analytical Results**  
**Quarter 4 - 2012**  
**Michigan Plaza**  
**3801-3823 West Michigan Street**  
**Indianapolis, Indiana**  
**MUNDELL Project No.: M01046**

Well ID	Sample Date	PCE	TCE	cis-1,2-DCE	trans-1,2-DCE	Chloroform	Vinyl chloride
		ug/l	ug/l	ug/l	ug/l	ug/l	ug/l
IDEM RISC Industrial Default Cleanup Level - 2006		55	31	1,000	2,000	1,000	4
IDEM RISC Residential Default Cleanup Level - 2006		5	5	70	100	80	2
MMW-15S	2/15/2012	<5.0	<5.0	<5.0	<5.0	<5.0	<2.0
	4/26/2012	<5.0	<5.0	11.2	<5.0	<5.0	<2.0
	8/6/2012	<5.0	<5.0	<5.0	<5.0	<5.0	<2.0
	11/21/2012	<5.0	<5.0	<5.0	<5.0	<5.0	<2.0
<i>Deep Wells</i>							
MMW-4D	8/25/2004	<5.0	<5.0	<5.0	<5.0	<5.0	<2.0
	9/10/2004	<5.0	<5.0	980	<5.0	<5.0	200
	11/10/2005	<5.0	<5.0	850	<5.0	<5.0	240
	9/5/2006	<5.0	<5.0	1,100	<5.0	<5.0	220
	2/22/2007	<5.0	<5.0	1,460	<5.0	<5.0	248
	6/2/2008	<5.0	<5.0	515	<5.0	<5.0	32.2
	6/15/2009	<5.0	<5.0	892	7.0	<5.0	142
	4/20/2010	<5.0	<5.0	719	<5.0	<5.0	237
	4/29/2011	<5.0	<5.0	1,050	<5.0	<5.0	164
	2/14/2012	<5.0	<5.0	639	<5.0	<5.0	237
	4/23/2012	<5.0	<5.0	338	<5.0	<5.0	176
	7/31/2012	<5.0	<5.0	347	<5.0	<5.0	129
	11/13/2012	<5.0	<5.0	463	<5.0	<5.0	164
MMW-5D	8/24/2004	<5.0	<5.0	<5.0	<5.0	<5.0	<2.0
	9/10/2004	<5.0	<5.0	3,400	13.0	<5.0	270
	11/10/2005	<5.0	<5.0	3,900	19.0	<5.0	140
	9/5/2006	<50.0	<50	2,500	<50	<5.0	170
	2/22/2007	<50.0	<50	3,970	<50	<5.0	359
	6/2/2008	<5.0	<5.0	1,360	19.9	<5.0	207
	6/15/2009	<5.0	<5.0	1,110	14.5	<5.0	242
	4/20/2010	<5.0	<5.0	943	<5.0	<5.0	204
	4/29/2011	<5.0	<5.0	659	<5.0	<5.0	166
	4/23/2012	<5.0	<5.0	228	<5.0	<5.0	126
MMW-6D	9/10/2004	<5.0	<5.0	540	<5.0	<5.0	400
	11/10/2005	<5.0	<5.0	750	<5.0	<5.0	700
	9/5/2006	<5.0	<5.0	300	<5.0	<5.0	440
	2/21/2007	<5.0	<5.0	171	<5.0	<5.0	282
	6/2/2008	<5.0	<5.0	65.5	<5.0	<5.0	242
	6/15/2009	<5.0	<5.0	8.6	<5.0	<5.0	111
	4/20/2010	<5.0	<5.0	8.2	<5.0	<5.0	63.6
	4/29/2011	<5.0	<5.0	<5.0	<5.0	<5.0	51.1
	2/14/2012	<5.0	<5.0	<5.0	<5.0	<5.0	43.9
	4/23/2012	<5.0	<5.0	<5.0	<5.0	<5.0	38.5
	7/31/2012	<5.0	<5.0	<5.0	<5.0	<5.0	38.1
MMW-11D	11/13/2012	<5.0	<5.0	<5.0	<5.0	<5.0	57.5
	6/16/2009	<5.0	<5.0	25.3	6.7	<5.0	<2.0
	8/5/2009	<5.0	<5.0	485	22.6	<5.0	15.3
	11/2/2009	<5.0	<5.0	771	31.8	<5.0	18.8
	2/3/2010	<5.0	<5.0	301	28.2	<5.0	5.2
	4/22/2010	<5.0	<5.0	307	21.8	<5.0	2.6
	7/21/2010	<5.0	<5.0	396	21.8	<5.0	10.9
	10/12/2010	<5.0	<5.0	162	<5.0	<5.0	<2.0
	1/19/2011	<5.0	<5.0	570	26.7	<5.0	5.9
	4/30/2011	<5.0	<5.0	356	17.2	<5.0	3.6
	7/26/2011	<5.0	<5.0	304	18.3	<5.0	3.6
	10/21/2011	<5.0	<5.0	751	22.7	<5.0	11.8
	2/14/2012	<5.0	<5.0	240	19.0	<5.0	<2.0
	4/24/2012	<5.0	<5.0	186	13.0	<5.0	<2.0
	7/31/2012	<5.0	<5.0	310	20.3	<5.0	3.2
	11/13/2012	<5.0	<5.0	309	14.6	<5.0	2.9

**Table 3**  
**Cumulative Monitoring Well Groundwater Analytical Results**  
**Quarter 4 - 2012**  
**Michigan Plaza**  
**3801-3823 West Michigan Street**  
**Indianapolis, Indiana**  
**MUNDELL Project No.: M01046**

Well ID	Sample Date	PCE	TCE	cis-1,2-DCE	trans-1,2-DCE	Chloroform	Vinyl chloride
		ug/l	ug/l	ug/l	ug/l	ug/l	ug/l
IDEM RISC Industrial Default Cleanup Level - 2006		55	31	1,000	2,000	1,000	4
IDEM RISC Residential Default Cleanup Level - 2006		5	5	70	100	80	2
MMW-13D	8/5/2009	<5.0	<5.0	672	<5.0	<5.0	59.2
	11/2/2009	<5.0	<5.0	949	<5.0	<5.0	182
	2/3/2010	<5.0	<5.0	819	6.2	<5.0	260
	4/22/2010	<5.0	<5.0	469	<5.0	<5.0	4.6
	7/21/2010	<5.0	<5.0	432	<5.0	<5.0	16.6
	10/12/2010	<5.0	<5.0	1,200	<5.0	<5.0	187
	1/19/2011	<5.0	<5.0	920	12.3	<5.0	179
	4/30/2011	<5.0	<5.0	527	<5.0	<5.0	15.4
	7/26/2011	<5.0	<5.0	328	<5.0	<5.0	11.9
	10/18/2011	<5.0	<5.0	771	5.2	<5.0	140
	2/14/2012	<5.0	<5.0	331	<5.0	<5.0	9.9
	4/24/2012	<5.0	<5.0	422	<5.0	<5.0	46.7
	7/31/2012	<5.0	<5.0	684	<5.0	<5.0	147
	11/13/2012	<5.0	<5.0	765	<5.0	<5.0	135
MMW-13D Low	6/16/2009	<5.0	<5.0	613	10.4	<5.0	17.3
MMW-13D Medium (29')	6/16/2009	<5.0	<5.0	578	12.1	<5.0	14.9
MMW-13D High (17')	6/16/2009	<5.0	<5.0	597	9.7	<5.0	21.1
MMW-14D	6/16/2009	<5.0	<5.0	648	15.6	<5.0	57.6
	8/5/2009	<5.0	<5.0	589	10.9	<5.0	79.1
	11/2/2009	<5.0	<5.0	541	9.2	<5.0	83.8
	2/3/2010	<5.0	<5.0	871	13.9	<5.0	84.9
	4/20/2010	<5.0	<5.0	763	14.1	<5.0	72.8
	7/21/2010	<5.0	<5.0	805	14.6	<5.0	60.8
	10/12/2010	<5.0	<5.0	775	8.4	<5.0	83.3
	1/18/2011	<5.0	<5.0	785	24.0	<5.0	109
	4/30/2011	<5.0	<5.0	1,070	14.7	<5.0	68.3
	7/26/2011	<5.0	<5.0	875	15.3	<5.0	81.0
	10/19/2011	<5.0	<5.0	898	11.1	<5.0	92.6
	2/14/2012	<5.0	<5.0	1080	17.4	<5.0	89.7
	4/23/2012	<5.0	<5.0	996	11.0	<5.0	79.6
	7/31/2012	<5.0	<5.0	795	13.5	<5.0	95.1
	11/13/2012	<5.0	<5.0	1010	10.0	<5.0	105
MMW-15D	2/15/2012	<5.0	<5.0	7.3	<5.0	<5.0	<2.0
	4/26/2012	<5.0	<5.0	<5.0	<5.0	<5.0	<2.0
	8/6/2012	<5.0	<5.0	11.6	<5.0	<5.0	3.1
	11/21/2012	<5.0	<5.0	10.6	<5.0	<5.0	<2.0
<b>Monitoring Wells (Plaza)</b>							
<i>Shallow Wells</i>							
MMW-P-01	11/9/2005	33	210	160	9.6	<5.0	76.0
	2/22/2007	85.2	356	274	16.7	<5.0	28.7
	6/14/2007	111	368	350	10.0	<5.0	79.6
	9/20/2007	206	322	300	11.5	<5.0	127
	12/14/2007	230	320	240	7.1	<5.0	87.0
	3/21/2008	120	170	3,100	25.0	<5.0	42.0
	6/5/2008	22.0	31.5	3,660	68.6	<5.0	123
	9/11/2008	14.2	15.1	1,690	<5.0	<5.0	87.7
	11/19/2008	<5.0	<5.0	4,320	<5.0	<5.0	116
	3/17/2009	17.5	22.6	12,300	143	<5.0	3,290
	6/17/2009	<50.0	<50.0	4,020	63.9	<50.0	1,840
	8/6/2009	97.4	<50.0	12,200	<50.0	<50.0	3,730
	11/3/2009	103	58.3	9,330	<50.0	<50.0	4,770
	2/4/2010	104	60.6	9,190	130	<50.0	13,600
	4/22/2010	90.5	79.0	9,400	94.7	<50.0	12,600
	7/7/2010	<50.0	<50.0	1,880	<50.0	<50.0	2,960
	10/14/2010	<125	<125	4,760	<125	<125	5,440
	1/20/2011	153	140	1,960	<50.0	<50.0	11,100
	5/5/2011	8.4	26.8	281	<5.0	<5.0	232
	7/28/2011	5.7	6.0	734	<5.0	<5.0	1,070
	10/24/2011	23.4	10.0	839	9.10	<5.0	1,410
	2/13/2012	15.0	<5.0	438	<5.0	<5.0	2,270
	4/25/2012	21.8	11.0	459	8.1	<5.0	1,720
	8/2/2012	12.0	8.0	377	<5.0	<5.0	1,680
	11/14/2012	24.5	13.1	619	14.1	<5.0	3,060

**Table 3**  
 Cumulative Monitoring Well Groundwater Analytical Results  
 Quarter 4 - 2012  
 Michigan Plaza  
 3801-3823 West Michigan Street  
 Indianapolis, Indiana  
 MUNDELL Project No.: M01046

Well ID	Sample Date	PCE	TCE	cis-1,2-DCE	trans-1,2-DCE	Chloroform	Vinyl chloride
		ug/l	ug/l	ug/l	ug/l	ug/l	ug/l
IDEM RISC Industrial Default Cleanup Level - 2006		55	31	1,000	2,000	1,000	4
IDEM RISC Residential Default Cleanup Level - 2006		5	5	70	100	80	2
MMW-P-02	11/8/2005	24.0	<5.0	87.0	7.3	<5.0	49.0
	2/22/2007	184	<5.0	39.4	<5.0	<5.0	27.4
	6/14/2007	17.1	<5.0	35.0	<5.0	<5.0	27.5
	9/19/2007	13.3	<5.0	66.3	5.6	<5.0	50.1
	12/13/2007	7.8	<5.0	69.0	<5.0	<5.0	53.0
	3/20/2008	19.0	<5.0	67.0	<5.0	<5.0	42.0
	6/5/2008	94.9	<5.0	44.0	<5.0	<5.0	46.4
	9/11/2008	17.5	<5.0	46.6	<5.0	<5.0	42.0
	11/19/2008	10.7	<5.0	75.4	<5.0	<5.0	69.5
	3/17/2009	23.4	<5.0	65.4	5.3	<5.0	68.4
	6/17/2009	5.1	<5.0	54.2	9.2	<5.0	80.6
	8/6/2009	5.1	<5.0	55.8	<5.0	<5.0	56.2
	11/3/2009	11.1	<5.0	60.1	<5.0	<5.0	73.9
	2/4/2010	7.4	<5.0	75.8	5.8	<5.0	104
	4/22/2010	9.9	6.8	56.0	8.0	<5.0	110
	7/21/2010	24.0	<5.0	72.4	<5.0	<5.0	161
	10/13/2010	9.3	<5.0	61.0	<5.0	<5.0	95.0
	1/19/2011	15.9	<5.0	64.3	14.0	<5.0	396
	5/4/2011	9.2	<5.0	56.5	<5.0	<5.0	386
	7/27/2011	<5.0	<5.0	42.9	<5.0	<5.0	218
	10/19/2011	9.1	<5.0	36.9	<5.0	<5.0	304
	2/13/2012	<5.0	<5.0	120.0	<5.0	<5.0	479
	4/25/2012	<5.0	<5.0	53.4	<5.0	<5.0	274
	8/1/2012	6.4	<5.0	34.2	<5.0	<5.0	257
	11/14/2012	6.7	<5.0	54.0	<5.0	<5.0	803
MMW-P-03S	11/9/2005	110	<5.0	97.0	9.6	<5.0	<2.0
	2/22/2007	397	<5.0	105	10.0	<5.0	<2.0
	6/14/2007	256	<5.0	96.4	9.2	<5.0	9.3
	9/20/2007	144	<5.0	131	15.8	<5.0	16.0
	12/13/2007	67.0	<5.0	88.0	5.3	<5.0	15.0
	3/20/2008	130	<5.0	84.0	7.3	<5.0	10.0
	6/5/2008	19.4	<5.0	380	14.9	<5.0	10.6
	9/11/2008	<5.0	<5.0	<5.0	<5.0	<5.0	72.6
	11/19/2008	<5.0	6.0	494	<5.0	<5.0	40.8
	3/17/2009	7.5	<5.0	904	38.7	<5.0	283
	6/17/2009	<5.0	<5.0	332	22.3	<5.0	759
	8/6/2009	30.6	8.2	573	25.0	<5.0	843
	11/3/2009	<5.0	<5.0	141	16.1	<5.0	379
	2/4/2010	<5.0	<5.0	155	19.4	<5.0	382
	4/22/2010	14.2	8.9	156	13.4	<5.0	377
	7/21/2010	<5.0	<5.0	<5.0	<5.0	<5.0	141
	10/13/2010	<5.0	<5.0	70.9	9.2	<5.0	542
	1/19/2011	<5.0	<5.0	79.7	19.4	<5.0	338
	5/4/2011	<5.0	<5.0	<5.0	<5.0	<5.0	<2.0
	7/27/2011	<5.0	<5.0	29.3	<5.0	<5.0	245
	10/19/2011	<5.0	<5.0	33.5	6.6	<5.0	446
	2/13/2012	<5.0	<5.0	48.0	<5.0	<5.0	221
	4/25/2012	<5.0	<5.0	18.4	<5.0	<5.0	257
	8/1/2012	<5.0	<5.0	16.1	<5.0	<5.0	294
	11/14/2012	<5.0	<5.0	12.3	<5.0	<5.0	113

**Table 3**  
**Cumulative Monitoring Well Groundwater Analytical Results**  
**Quarter 4 - 2012**  
**Michigan Plaza**  
**3801-3823 West Michigan Street**  
**Indianapolis, Indiana**  
**MUNDELL Project No.: M01046**

Well ID	Sample Date	PCE	TCE	cis-1,2-DCE	trans-1,2-DCE	Chloroform	Vinyl chloride
		ug/l	ug/l	ug/l	ug/l	ug/l	ug/l
IDEM RISC Industrial Default Cleanup Level - 2006		55	31	1,000	2,000	1,000	4
IDEM RISC Residential Default Cleanup Level - 2006		5	5	70	100	80	2
MMW-P-04	11/9/2005	180	<5.0	<5.0	<5.0	<5.0	<2.0
	2/22/2007	315	<5.0	<5.0	<5.0	<5.0	<2.0
	6/14/2007	268	<5.0	<5.0	<5.0	<5.0	<2.0
	9/20/2007	214	<5.0	<5.0	<5.0	<5.0	<2.0
	12/13/2007	62.0	<5.0	<5.0	<5.0	<5.0	<2.0
	3/20/2008	120	<5.0	<5.0	<5.0	<5.0	<2.0
	6/6/2008	154	6.0	59.7	<5.0	<5.0	<2.0
	9/11/2008	31.9	<5.0	360	7.1	<5.0	<2.0
	11/19/2008	45.0	<5.0	248	<5.0	<5.0	<2.0
	3/18/2009	19.4	5.4	304	10.8	<5.0	<2.0
	6/17/2009	35.3	5.4	827	22.0	<5.0	2.0
	8/6/2009	<5.0	<5.0	15.1	<5.0	<5.0	<2.0
	11/5/2009	<5.0	<5.0	1,190	36.9	<5.0	90.9
	2/12/2010	<5.0	<5.0	144	8.3	<5.0	224
	4/21/2010	<5.0	<5.0	268	15.8	<5.0	364
	7/22/2010	<5.0	<5.0	189	12.9	<5.0	402
	10/13/2010	<5.0	<5.0	10.3	<5.0	<5.0	16.8
	2/18/2011	<5.0	<5.0	6.4	<5.0	<5.0	36.3
	5/5/2011	144	<5.0	76.2	<5.0	<5.0	124
	7/28/2011	<5.0	<5.0	30.6	<5.0	<5.0	78.8
	10/24/2011	<5.0	<5.0	14.8	<5.0	<5.0	68.7
	2/16/2012	<5.0	<5.0	6.9	<5.0	<5.0	16.1
	5/1/2012	<5.0	<5.0	<5.0	<5.0	<5.0	5.7
	8/10/2012	<5.0	<5.0	5.8	<5.0	<5.0	2.7
	11/21/2012	<5.0	<5.0	<5.0	<5.0	<5.0	<2.0
MMW-P-05	11/8/2005	<5.0	<5.0	6.2	<5.0	<5.0	<2.0
	2/22/2007	23.7	<5.0	9.1	<5.0	<5.0	<2.0
	6/14/2007	<5.0	<5.0	18.8	<5.0	<5.0	<2.0
	9/19/2007	<5.0	<5.0	18.8	<5.0	<5.0	<2.0
	12/14/2007	<5.0	<5.0	14.8	<5.0	<5.0	<2.0
	3/20/2008	<5.0	<5.0	8.1	<5.0	<5.0	<2.0
	6/5/2008	<5.0	<5.0	15.6	<5.0	<5.0	<2.0
	9/11/2008	<5.0	<5.0	16.7	<5.0	<5.0	<2.0
	11/19/2008	<5.0	<5.0	22.1	<5.0	<5.0	<2.0
	3/17/2009	<5.0	<5.0	13.7	<5.0	<5.0	<2.0
	6/17/2009	<5.0	<5.0	10.9	6.6	<5.0	<2.0
	8/6/2009	<5.0	<5.0	15.1	<5.0	<5.0	<2.0
	11/3/2009	<5.0	<5.0	7.6	<5.0	<5.0	2.7
	2/4/2010	<5.0	<5.0	6.8	<5.0	<5.0	<2.0
	4/22/2010	<5.0	<5.0	8.6	<5.0	<5.0	<2.0
	7/21/2010	<5.0	<5.0	10.4	<5.0	<5.0	5.3
	10/13/2010	<5.0	<5.0	13.6	<5.0	<5.0	3.9
	1/20/2011	<5.0	<5.0	14.1	<5.0	<5.0	<2.0
	4/30/2011	<5.0	<5.0	<5.0	<5.0	<5.0	9.2
	7/27/2011	<5.0	<5.0	10.3	<5.0	<5.0	307
	10/19/2011	<5.0	<5.0	8.3	<5.0	<5.0	48.3
	2/13/2012	<5.0	<5.0	<5.0	<5.0	<5.0	79.4
	4/25/2012	<5.0	<5.0	<5.0	<5.0	<5.0	80.9
	8/2/2012	<5.0	<5.0	<5.0	<5.0	<5.0	157
	11/14/2012	<5.0	<5.0	<5.0	<5.0	<5.0	151

**Table 3**  
**Cumulative Monitoring Well Groundwater Analytical Results**  
**Quarter 4 - 2012**  
**Michigan Plaza**  
**3801-3823 West Michigan Street**  
**Indianapolis, Indiana**  
**MUNDELL Project No.: M01046**

Well ID	Sample Date	PCE	TCE	cis-1,2-DCE	trans-1,2-DCE	Chloroform	Vinyl chloride
		ug/l	ug/l	ug/l	ug/l	ug/l	ug/l
IDEM RISC Industrial Default Cleanup Level - 2006		55	31	1,000	2,000	1,000	4
IDEM RISC Residential Default Cleanup Level - 2006		5	5	70	100	80	2
MMW-P-06	11/8/2005	<5.0	<5.0	200	24.0	<5.0	21.0
	2/22/2007	<5.0	<5.0	158	19.2	<5.0	<2.0
	6/14/2007	<5.0	<5.0	214	22.7	<5.0	13.3
	9/19/2007	<5.0	<5.0	283	38.2	<5.0	26.1
	12/14/2007	<5.0	<5.0	260	40.0	<5.0	31.0
	3/20/2008	<5.0	<5.0	250	31.0	<5.0	26.0
	6/5/2008	<5.0	<5.0	265	30.9	<5.0	40.1
	9/11/2008	<5.0	<5.0	271	33.3	<5.0	<2.0
	11/19/2008	<5.0	<5.0	292	<5.0	<5.0	61.4
	3/17/2009	<5.0	<5.0	292	35.3	<5.0	<2.0
	6/17/2009	<5.0	<5.0	145	22.2	<5.0	90.6
	8/6/2009	<5.0	<5.0	136	14.3	<5.0	301
	11/3/2009	<5.0	<5.0	107	15.2	<5.0	292
	2/4/2010	<5.0	<5.0	79.1	11.2	<5.0	1,870
	4/22/2010	<5.0	<5.0	23.7	8.0	<5.0	2,470
	7/21/2010	<50.0	<50.0	<50.0	<50.0	<50.0	5,870
	10/14/2010	<100	<100	<100	<100	<100	12,900
	1/20/2011	<100	<100	2,700	<100	<100	15,000
	5/4/2011	<50.0	<50.0	2,850	<50.0	<50.0	14,400
	7/28/2011	<50.0	<50.0	1,670	<50.0	<50.0	15,600
	10/24/2011	<50.0	<50.0	10,100	<50.0	<50.0	11,300
MMW-P-07	2/13/2012	<50.0	<50.0	2,800	<50.0	<50.0	10,100
	4/26/2012	<5.0	<5.0	3,220	29.2	<5.0	7,090
	8/2/2012	<5.0	<5.0	6,420	47.0	<5.0	6,510
	11/14/2012	<5.0	<5.0	4,640	<5.0	<5.0	6,170
	2/22/2007	3,060	81.5	82.0	8.8	<5.0	<2.0
	6/14/2007	2,850	90.0	82.5	<50.0	<50.0	<20.0
	9/20/2007	5,200	109	121	16.1	<5.0	2.0
	12/13/2007	1,440	157	930	8.8	7.4	80.0
	3/21/2008	31.0	7.6	1,700	27.0	<5.0	110
	6/5/2008	<5.0	<5.0	938	15.6	<5.0	466
	9/11/2008	<5.0	<5.0	1,870	55.2	<5.0	1,620
	11/19/2008	<5.0	<5.0	797	<5.0	<5.0	749
	3/17/2009	<5.0	<5.0	361	17.7	<5.0	1,830
	6/17/2009	<5.0	<5.0	87.1	9.4	<5.0	1,130
	8/6/2009	<5.0	<5.0	48.7	<5.0	<5.0	787
	11/3/2009	<5.0	<5.0	809	14.1	<5.0	1,510
	2/4/2010	<5.0	<5.0	555	12.4	<5.0	1,880
	4/22/2010	<5.0	7.0	1,050	23.7	<5.0	2,080
	7/22/2010	<5.0	<5.0	247	7.8	<5.0	1,680
	10/14/2010	<25.0	<25.0	665	<25.0	<25.0	2,310
	1/20/2011	<5.0	<5.0	295	13.9	<5.0	562
	5/4/2011	<5.0	<5.0	72.0	<5.0	<5.0	2,170
	7/28/2011	<5.0	<5.0	73.6	<5.0	<5.0	978
	10/24/2011	<5.0	<5.0	37.3	<5.0	<5.0	388
	2/13/2012	<5.0	<5.0	<5.0	<5.0	<5.0	330
	4/25/2012	<5.0	<5.0	11.6	<5.0	<5.0	266
	8/2/2012	<5.0	<5.0	33.7	<5.0	<5.0	405
	11/14/2012	<5.0	<5.0	42.2	<5.0	<5.0	607

**Table 3**  
**Cumulative Monitoring Well Groundwater Analytical Results**  
**Quarter 4 - 2012**  
**Michigan Plaza**  
**3801-3823 West Michigan Street**  
**Indianapolis, Indiana**  
**MUNDELL Project No.: M01046**

Well ID	Sample Date	PCE	TCE	cis-1,2-DCE	trans-1,2-DCE	Chloroform	Vinyl chloride
		ug/l	ug/l	ug/l	ug/l	ug/l	ug/l
IDEM RISC Industrial Default Cleanup Level - 2006		55	31	1,000	2,000	1,000	4
IDEM RISC Residential Default Cleanup Level - 2006		5	5	70	100	80	2
MMW-P-08	2/22/2007	6,280	281	240	26.7	<5.0	<2.0
	6/14/2007	6,440	310	169	<50.0	<50.0	<20.0
	9/20/2007	9,780	494	201	25.3	<5.0	6.5
	12/14/2007	390	210	5,800	<50.0	<50.0	<20.0
	3/21/2008	6.7	11.0	6,500	130	<5.0	55.0
	6/5/2008	<5.0	<5.0	<5.0	<5.0	<5.0	562
	9/11/2008	5.8	5.0	18,300	686	<50.0	4,740
	11/19/2008	<50.0	<50.0	5,690	91.4	<50.0	13,000
	3/17/2009	<5.0	<5.0	1,130	47.1	<5.0	5,680
	6/17/2009	<125	<125	356	145	<5.0	7,200
	8/6/2009	<125	<125	601	<50.0	<50.0	8,960
	11/3/2009	<50.0	<50.0	86.7	<50.0	<50.0	2,860
	2/4/2010	<50.0	<50.0	1,140	<50.0	<50.0	4,860
	4/22/2010	<5.0	<5.0	45.7	8.1	<5.0	2,180
	7/22/2010	<5.0	<5.0	97.8	<5.0	<5.0	1,320
	10/14/2010	<25.0	<25.0	39.5	<25.0	<25.0	676
	1/20/2011	<5.0	<5.0	590	14.8	<25.0	1,770
	5/4/2011	<5.0	<5.0	288	<5.0	<5.0	2,030
	7/27/2011	<5.0	<5.0	35.9	<5.0	<5.0	274
	10/24/2011	<5.0	<5.0	32.5	<5.0	<5.0	136
	2/13/2012	<5.0	<5.0	<5.0	<5.0	<5.0	52.5
	4/25/2012	<5.0	<5.0	5.0	<5.0	<5.0	85.2
	8/2/2012	<5.0	<5.0	879	13.9	<5.0	561
	11/14/2012	<5.0	<5.0	18.4	<5.0	<5.0	436
MMW-P-09S	2/22/2007	10.0	<5.0	<5.0	<5.0	<5.0	<2.0
	6/14/2007	<5.0	<5.0	<5.0	<5.0	<5.0	<2.0
	9/19/2007	<5.0	<5.0	<5.0	<5.0	<5.0	<2.0
	12/12/2007	<5.0	<5.0	<5.0	<5.0	<5.0	<2.0
	3/20/2008	<5.0	<5.0	<5.0	<5.0	<5.0	<2.0
	6/5/2008	<5.0	<5.0	<5.0	<5.0	<5.0	<2.0
	9/11/2008	<5.0	<5.0	<5.0	<5.0	<5.0	<2.0
	11/19/2008	<5.0	<5.0	<5.0	<5.0	<5.0	<2.0
	3/17/2009	<5.0	<5.0	<5.0	<5.0	<5.0	<2.0
	6/16/2009	<5.0	<5.0	<5.0	<5.0	<5.0	<2.0
	8/6/2009	<5.0	<5.0	<5.0	<5.0	<5.0	<2.0
	11/3/2009	<5.0	<5.0	<5.0	<5.0	<5.0	<2.0
	2/3/2010	<5.0	<5.0	<5.0	<5.0	<5.0	<2.0
	4/22/2010	<5.0	<5.0	<5.0	<5.0	<5.0	<2.0
	7/22/2010	<5.0	<5.0	<5.0	<5.0	<5.0	<2.0
	10/13/2010	<5.0	<5.0	<5.0	<5.0	<5.0	<2.0
	1/19/2011	<5.0	<5.0	<5.0	<5.0	<5.0	<2.0
	4/30/2011	<5.0	<5.0	<5.0	<5.0	<5.0	<2.0
	7/26/2011	<5.0	<5.0	<5.0	<5.0	<5.0	<2.0
	10/18/2011	<5.0	<5.0	<5.0	<5.0	<5.0	<2.0
	2/15/2012	<5.0	<5.0	<5.0	<5.0	<5.0	<2.0
	4/24/2012	<5.0	<5.0	<5.0	<5.0	<5.0	<2.0
	8/1/2012	<5.0	<5.0	<5.0	<5.0	<5.0	<2.0
	11/13/2012	<5.0	<5.0	<5.0	<5.0	<5.0	<2.0

**Table 3**  
**Cumulative Monitoring Well Groundwater Analytical Results**  
**Quarter 4 - 2012**  
**Michigan Plaza**  
**3801-3823 West Michigan Street**  
**Indianapolis, Indiana**  
**MUNDELL Project No.: M01046**

Well ID	Sample Date	PCE	TCE	cis-1,2-DCE	trans-1,2-DCE	Chloroform	Vinyl chloride
		ug/l	ug/l	ug/l	ug/l	ug/l	ug/l
IDEM RISC Industrial Default Cleanup Level - 2006		55	31	1,000	2,000	1,000	4
IDEM RISC Residential Default Cleanup Level - 2006		5	5	70	100	80	2
MMW-P-10S	6/14/2007	36.1	36.3	61.6	6.9	<5.0	<2.0
	7/6/2007	87.9	54.9	92.1	10.2	<5.0	<2.0
	9/19/2007	192	82.6	126	14.4	<5.0	<2.0
	12/14/2007	71.0	<5.0	<5.0	<5.0	<5.0	2.4
	3/20/2008	26.8	19.2	250	12.2	<5.0	<2.0
	6/5/2008	15.0	9.7	537	16.0	<5.0	114
	9/11/2008	74.8	36.5	1,650	74.0	<5.0	27.7
	11/19/2008	78.6	28.0	1,510	<5.0	<5.0	22.3
	3/17/2009	11.9	8.6	1,160	71.5	<5.0	<2.0
	6/17/2009	<5.0	<5.0	331	20.5	<5.0	63.9
	8/6/2009	<5.0	<5.0	158	16.1	<5.0	395
	11/3/2009	<5.0	<5.0	29.6	<5.0	<5.0	288
	2/4/2010	<5.0	<5.0	45.4	<5.0	<5.0	419
	4/22/2010	<5.0	<5.0	16.2	<5.0	<5.0	118
	7/21/2010	<5.0	<5.0	<5.0	<5.0	<5.0	16.5
	10/14/2010	<5.0	<5.0	5.4	<5.0	<5.0	381
	1/20/2011	<5.0	<5.0	11.7	<5.0	<5.0	27.8
	5/5/2011	<5.0	<5.0	<5.0	<5.0	<5.0	<2.0
	7/27/2011	<5.0	<5.0	<5.0	<5.0	<5.0	12.5
	10/21/2011	<5.0	<5.0	<5.0	<5.0	<5.0	<2.0
	2/13/2012	<5.0	<5.0	<5.0	<5.0	<5.0	<2.0
	4/25/2012	<5.0	<5.0	<5.0	<5.0	<5.0	<2.0
	8/2/2012	<5.0	<5.0	<5.0	<5.0	<5.0	26.8
	11/14/2012	<5.0	<5.0	<5.0	<5.0	<5.0	2.3
MMW-P-12S	9/9/2011	<5.0	<5.0	741	14.1	<5.0	50.8
	10/24/2011	<5.0	<5.0	642	19.2	<5.0	60.7
	2/15/2012	<5.0	<5.0	777	14.5	<5.0	61.4
	5/1/2012	<5.0	<5.0	454	12.4	<5.0	50.9
	8/7/2012	<5.0	<5.0	679	20.3	<5.0	51.8
	11/19/2012	<5.0	<5.0	763	15.8	<5.0	76.1
<i>Deep Wells</i>							
MMW-P-03D	11/9/2005	22.0	<5.0	42.0	<5.0	<5.0	2.0
	2/22/2007	48.9	<5.0	57.8	<5.0	39.0	15.6
	6/14/2007	21.7	<5.0	74.9	<5.0	<5.0	34.5
	9/19/2007	14.3	<5.0	76.1	7.3	<5.0	36.6
	12/13/2007	11.0	<5.0	40.0	<5.0	<5.0	20.0
	39527	<5.0	<5.0	170	6.0	<5.0	18.0
	39604	<5.0	<5.0	150	7.4	<5.0	26.0
	39702	<5.0	<5.0	95.7	6.4	<5.0	<2.0
	11/19/2008	<5.0	<5.0	80.6	<5.0	<5.0	36.9
	3/17/2009	<5.0	<5.0	65.2	<5.0	<5.0	69.8
	6/17/2009	<5.0	<5.0	14.9	5.9	<5.0	137
	8/6/2009	<5.0	<5.0	16.7	<5.0	<5.0	248
	11/3/2009	<5.0	<5.0	8.5	<5.0	<5.0	168
	2/4/2010	<5.0	<5.0	<5.0	<5.0	<5.0	287
	4/22/2010	<5.0	<5.0	7.2	<5.0	<5.0	211
	7/21/2010	6.6	<5.0	271	8.1	<5.0	305
	10/13/2010	<5.0	<5.0	<5.0	<5.0	<5.0	16.2
	1/19/2011	<5.0	<5.0	<5.0	<5.0	<5.0	46.2
	5/4/2011	<5.0	<5.0	64.3	<5.0	<5.0	118
	7/27/2011	<5.0	<5.0	<5.0	<5.0	<5.0	10.5
	10/18/2011	<5.0	<5.0	<5.0	<5.0	<5.0	61.5
	2/13/2012	<5.0	<5.0	<5.0	<5.0	<5.0	4.0
	4/25/2012	<5.0	<5.0	<5.0	<5.0	<5.0	16.6
	8/1/2012	<5.0	<5.0	<5.0	<5.0	<5.0	175
	11/14/2012	<5.0	<5.0	<5.0	<5.0	<5.0	17

**Table 3**  
**Cumulative Monitoring Well Groundwater Analytical Results**  
**Quarter 4 - 2012**  
**Michigan Plaza**  
**3801-3823 West Michigan Street**  
**Indianapolis, Indiana**  
**MUNDELL Project No.: M01046**

Well ID	Sample Date	PCE	TCE	cis-1,2-DCE	trans-1,2-DCE	Chloroform	Vinyl chloride
		ug/l	ug/l	ug/l	ug/l	ug/l	ug/l
IDEM RISC Industrial Default Cleanup Level - 2006		55	31	1,000	2,000	1,000	4
IDEM RISC Residential Default Cleanup Level - 2006		5	5	70	100	80	2
MMW-P-09D	6/14/2007	<5.0	<5.0	<5.0	<5.0	<5.0	46.2
	9/19/2007	<5.0	<5.0	<5.0	<5.0	<5.0	83.1
	12/12/2007	<5.0	<5.0	<5.0	<5.0	<5.0	71.0
	3/20/2008	<5.0	<5.0	<5.0	<5.0	<5.0	3.0
	6/5/2008	<5.0	<5.0	<5.0	<5.0	<5.0	100
	9/11/2008	<5.0	<5.0	<5.0	<5.0	<5.0	72.6
	11/19/2008	<5.0	<5.0	<5.0	<5.0	<5.0	97.2
	3/17/2009	<5.0	<5.0	<5.0	<5.0	<5.0	85.1
	6/16/2009	<5.0	<5.0	<5.0	<5.0	<5.0	73.5
	8/6/2009	<5.0	<5.0	<5.0	<5.0	<5.0	80.8
	11/3/2009	<5.0	<5.0	<5.0	<5.0	<5.0	87.1
	2/3/2010	<5.0	<5.0	<5.0	<5.0	<5.0	111
	4/22/2010	<5.0	<5.0	<5.0	<5.0	<5.0	76.9
	7/22/2010	<5.0	<5.0	<5.0	<5.0	<5.0	81.2
	10/13/2010	<5.0	<5.0	<5.0	<5.0	<5.0	70.6
	1/19/2011	<5.0	<5.0	<5.0	<5.0	<5.0	66.9
	4/30/2011	<5.0	<5.0	<5.0	<5.0	<5.0	74.5
	7/26/2011	<5.0	<5.0	<5.0	<5.0	<5.0	83.3
	10/21/2011	<5.0	<5.0	<5.0	<5.0	<5.0	71.9
MMW-P-10D	2/15/2012	<5.0	<5.0	<5.0	<5.0	<5.0	70.7
	4/24/2012	<5.0	<5.0	<5.0	<5.0	<5.0	56.6
	8/1/2012	<5.0	<5.0	<5.0	<5.0	<5.0	69.2
	11/13/2012	<5.0	<5.0	<5.0	<5.0	<5.0	61.6
	6/14/2007	<5.0	10.6	481	7.7	<5.0	98.7
	7/6/2007	<5.0	<5.0	498	9.0	<5.0	118
	9/19/2007	<5.0	<5.0	350	<5.0	<5.0	76.1
	12/14/2007	<5.0	<5.0	270	<5.0	<5.0	77.0
	3/20/2008	<5.0	<5.0	<5.0	<5.0	<5.0	3.0
	6/5/2008	<5.0	<5.0	508	<5.0	<5.0	267
	9/11/2008	<5.0	<5.0	435	<5.0	<5.0	288
	11/19/2008	<5.0	<5.0	3,390	<5.0	<5.0	5,030
	3/17/2009	<5.0	<5.0	4,860	12.9	<5.0	2,500
	6/17/2009	<5.0	<5.0	3,710	9.6	<5.0	9,070
	8/6/2009	<5.0	<5.0	2,520	5.1	<5.0	3,400
	11/3/2009	<5.0	<5.0	2,740	<5.0	<5.0	3,500
	2/4/2010	<5.0	<5.0	406	<5.0	<5.0	2,130
	4/22/2010	<5.0	<5.0	30.5	<5.0	<5.0	364
	7/22/2010	<5.0	<5.0	120	<5.0	<5.0	865
	10/14/2010	<25.0	<25.0	<25.0	<25.0	<25.0	707
	1/20/2011	<5.0	<5.0	21.4	<5.0	<5.0	1,210
MMW-P-12D	5/5/2011	<5.0	<5.0	8.1	<5.0	<5.0	272
	7/27/2011	<5.0	<5.0	46.5	<5.0	<5.0	825
	10/21/2011	<5.0	<5.0	<5.0	<5.0	<5.0	444
	2/13/2012	<5.0	<5.0	28.7	<5.0	<5.0	1790
	4/25/2012	<5.0	<5.0	<5.0	<5.0	<5.0	289
	8/2/2012	<5.0	<5.0	<5.0	<5.0	<5.0	475
	11/14/2012	<5.0	<5.0	<5.0	<5.0	<5.0	964
	9/9/2011	<5.0	<5.0	678	15.9	<5.0	63.0
	10/24/2011	<5.0	<5.0	644	14.2	<5.0	71.3
	2/15/2012	<5.0	<5.0	727	15.0	<5.0	65.1
ENVIRON Monitoring Wells (Off-site)	5/1/2012	<5.0	<5.0	591	15.2	<5.0	69.4
	8/7/2012	<5.0	<5.0	750	18.8	<5.0	67.6
	11/20/2012	<5.0	<5.0	793	17.4	<5.0	91.8
<b>Shallow Wells</b>							
MW-167S	11/7/2005	<5.0	<5.0	<5.0	<5.0	<5.0	14.0
	2/21/2007	<5.0	<5.0	<5.0	<5.0	<5.0	<2.0
	6/5/2008	<5.0	<5.0	<5.0	<5.0	<5.0	<2.0
	6/17/2009	<5.0	<5.0	<5.0	<5.0	<5.0	<2.0
	4/21/2010	<5.0	<5.0	<5.0	<5.0	<5.0	<2.0
	4/29/2011	<5.0	<5.0	<5.0	<5.0	<5.0	<2.0
	5/2/2012	<5.0	<5.0	<5.0	<5.0	<5.0	<2.0

**Table 3**  
**Cumulative Monitoring Well Groundwater Analytical Results**  
**Quarter 4 - 2012**  
**Michigan Plaza**  
**3801-3823 West Michigan Street**  
**Indianapolis, Indiana**  
**MUNDELL Project No.: M01046**

Well ID	Sample Date	PCE	TCE	cis-1,2-DCE	trans-1,2-DCE	Chloroform	Vinyl chloride
		ug/l	ug/l	ug/l	ug/l	ug/l	ug/l
IDEM RISC Industrial Default Cleanup Level - 2006		55	31	1,000	2,000	1,000	4
IDEM RISC Residential Default Cleanup Level - 2006		5	5	70	100	80	2
MW-168S	11/7/2005	280	16.0	53.0	<5.0	<5.0	3.0
	2/21/2007	30.1	8.8	155	<5.0	<5.0	29.6
	6/14/2007	<5.0	<5.0	40.8	<5.0	<5.0	34.0
	9/19/2007	32.6	8.0	82.4	<5.0	<5.0	3.5
	12/13/2007	52.0	14.0	78.0	<5.0	<5.0	4.1
	3/20/2008	92.0	12.0	46.0	<5.0	<5.0	4.2
	6/5/2008	80.4	10.1	41.1	<5.0	<5.0	3.6
	9/11/2008	68.5	10.8	66.9	<5.0	<5.0	5.5
	8/7/2009	62.6	10.2	118	<5.0	NS	9.9
	4/21/2010	14.0	7.0	21.9	<5.0	<5.0	<2.0
MW-169S	2/21/2007	<5.0	<5.0	<5.0	<5.0	<5.0	<2.0
	11/7/2005	<5.0	<5.0	<5.0	<5.0	NA	<2.0
	6/5/2008	<5.0	<5.0	<5.0	<5.0	<5.0	<2.0
	4/21/2010	<5.0	<5.0	<5.0	<5.0	<5.0	<2.0
	4/29/2011	<5.0	<5.0	<5.0	<5.0	<5.0	<2.0
MW-170S	2/21/2007	<5.0	<5.0	<5.0	<5.0	<5.0	21.2
	6/3/2008	<5.0	<5.0	<5.0	<5.0	<5.0	5.5
	6/17/2009	<5.0	<5.0	<5.0	<5.0	<5.0	<2.0
	4/21/2010	<5.0	<5.0	<5.0	<5.0	<5.0	<2.0
	4/29/2011	<5.0	<5.0	<5.0	<5.0	<5.0	<2.0
	2/16/2012	<5.0	<5.0	6.3	<5.0	<5.0	<2.0
	5/2/2012	<5.0	<5.0	6.0	<5.0	<5.0	<2.0
	8/3/2012	<5.0	<5.0	7.9	<5.0	<5.0	<2.0
	11/16/2012	<5.0	<5.0	6.1	<5.0	<5.0	<2.0
MW-171S	2/21/2007	<5.0	<5.0	<5.0	<5.0	<5.0	<2.0
	6/3/2008	<5.0	<5.0	<5.0	<5.0	<5.0	<2.0
	4/21/2010	<5.0	<5.0	<5.0	<5.0	<5.0	<2.0
	4/29/2011	<5.0	<5.0	<5.0	<5.0	<5.0	<2.0
	5/2/2012	<5.0	<5.0	<5.0	<5.0	<5.0	<2.0
<i>Deep Wells</i>							
MW-165D	7/7/2010	<5.0	<5.0	122	<5.0	<5.0	202
MW-167D	11/7/2005	<5.0	<5.0	750	<5.0	<5.0	110
	2/21/2007	<5.0	<5.0	375	10.0	<5.0	59.3
	6/5/2008	<5.0	<5.0	616	28.0	<5.0	43.8
	6/17/2009	<5.0	<5.0	612	22.1	<5.0	23.8
	4/21/2010	<5.0	<5.0	626	22.1	<5.0	25.6
	4/29/2011	<5.0	<5.0	392	18.9	<5.0	14.9
	2/16/2012	<5.0	<5.0	541	<5.0	<5.0	20.0
	5/2/2012	<5.0	<5.0	377	16.9	<5.0	21.7
	8/3/2012	<5.0	<5.0	422	26.4	<5.0	8.4
	11/16/2012	<5.0	<5.0	480	19.9	<5.0	9.2
MW-168D	11/7/2005	<5.0	<5.0	6.8	<5.0	<5.0	49.0
	2/21/2007	<5.0	<5.0	8.4	<5.0	<5.0	58.1
	6/14/2007	<5.0	<5.0	5.2	<5.0	<5.0	47.5
	9/19/2007	<5.0	<5.0	<5.0	<5.0	<5.0	89.7
	12/12/2007	<5.0	<5.0	<5.0	<5.0	<5.0	74.0
	3/20/2008	<5.0	<5.0	8.0	<5.0	<5.0	39.0
	6/5/2008	<5.0	<5.0	13.4	<5.0	<5.0	65.9
	9/11/2008	<5.0	<5.0	5.5	<5.0	<5.0	<2.0
	3/17/2009	<5.0	<5.0	16.5	<5.0	<5.0	<2.0
	6/18/2009	<5.0	<5.0	<5.0	<5.0	<5.0	14.5
	8/7/2009	<5.0	<5.0	<5.0	<5.0	<5.0	36.2
	11/4/2009	<5.0	<5.0	<5.0	<5.0	<5.0	99.1
	2/4/2010	<5.0	<5.0	6.3	<5.0	<5.0	128
	4/21/2010	<5.0	<5.0	13.2	<5.0	<5.0	134
	7/22/2010	<5.0	<5.0	6.0	<5.0	<5.0	122
	10/13/2010	<5.0	<5.0	<5.0	<5.0	<5.0	134
	4/29/2011	<5.0	<5.0	<5.0	10.0	<5.0	96.4
	7/28/2011	<5.0	<5.0	<5.0	<5.0	<5.0	228
	10/24/2011	<5.0	<5.0	8.9	<5.0	<5.0	137
	2/16/2012	<5.0	<5.0	<5.0	<5.0	<5.0	108
	5/2/2012	<5.0	<5.0	<5.0	<5.0	<5.0	130
	8/3/2012	<5.0	<5.0	<5.0	<5.0	<5.0	104
	11/16/2012	<5.0	<5.0	6.9	<5.0	<5.0	81.3

**Table 3**  
**Cumulative Monitoring Well Groundwater Analytical Results**  
**Quarter 4 - 2012**  
**Michigan Plaza**  
**3801-3823 West Michigan Street**  
**Indianapolis, Indiana**  
**MUNDELL Project No.: M01046**

Well ID	Sample Date	PCE	TCE	cis-1,2-DCE	trans-1,2-DCE	Chloroform	Vinyl chloride
		ug/l	ug/l	ug/l	ug/l	ug/l	ug/l
IDEM RISC Industrial Default Cleanup Level - 2006		55	31	1,000	2,000	1,000	4
IDEM RISC Residential Default Cleanup Level - 2006		5	5	70	100	80	2
MW-169D	2/21/2007	<5.0	<5.0	<5.0	<5.0	<5.0	11.9
	11/7/2005	<5.0	<5.0	<5.0	<5.0	NA	5.1
	6/5/2008	<5.0	<5.0	<5.0	<5.0	<5.0	14.3
	4/21/2010	<5.0	<5.0	<5.0	<5.0	<5.0	6.1
	4/29/2011	<5.0	<5.0	<5.0	<5.0	<5.0	9.1
	5/2/2012	<5.0	<5.0	<5.0	<5.0	<5.0	27.1
MW-170D	2/21/2007	<5.0	<5.0	<5.0	<5.0	<5.0	105
	6/3/2008	<5.0	<5.0	<5.0	<5.0	<5.0	230
	6/17/2009	<5.0	<5.0	<5.0	<5.0	<5.0	174
	4/21/2010	<5.0	<5.0	<5.0	<5.0	<5.0	161
	7/7/2010	<5.0	<5.0	<5.0	<5.0	<5.0	233
	4/29/2011	<5.0	<5.0	<5.0	<5.0	<5.0	100
	2/16/2012	<5.0	<5.0	<5.0	<5.0	<5.0	88.8
	5/2/2012	<5.0	<5.0	<5.0	<5.0	<5.0	91.0
	8/3/2012	<5.0	<5.0	<5.0	<5.0	<5.0	77.2
	11/16/2012	<5.0	<5.0	<5.0	<5.0	<5.0	62.8
MW-171D	2/21/2007	<5.0	<5.0	<5.0	<5.0	<5.0	<2.0
	6/3/2008	<5.0	<5.0	<5.0	<5.0	<5.0	3.0
	6/16/2009	<5.0	<5.0	<5.0	<5.0	<5.0	2.2
	4/21/2010	<5.0	<5.0	<5.0	<5.0	<5.0	6.3
	7/22/2010	<5.0	<5.0	<5.0	<5.0	<5.0	<2.0
	4/29/2011	<5.0	<5.0	<5.0	<5.0	<5.0	<2.0
	5/2/2012	<5.0	<5.0	<5.0	<5.0	<5.0	9.5
<b>Floral Park Cemetery Wells (Off-site)</b>							
<i>Shallow Wells</i>							
MMW-C-01	11/20/2008	15.7	8.3	296	<5.0	<5.0	<2.0
	3/17/2009	<5.0	<5.0	508	7.3	<5.0	<2.0
	6/18/2009	23.2	<5.0	<5.0	<5.0	<5.0	<2.0
	8/6/2009	84.8	<5.0	66.9	<5.0	<5.0	35.2
	11/3/2009	12.6	<5.0	211	8.9	<5.0	2,720
	2/3/2010	<5.0	<5.0	176	10.1	<5.0	1,790
	4/21/2010	15.3	<5.0	165	7.1	<5.0	1,660
	7/22/2010	40.9	<5.0	22.4	<5.0	<5.0	8.1
	10/14/2010	<5.0	<5.0	69.1	<5.0	<5.0	1,100
	1/19/2011	<5.0	<5.0	14.7	<5.0	<5.0	215
	5/5/2011	22.2	<5.0	<5.0	<5.0	<5.0	<2.0
	7/27/2011	36.7	<5.0	17.1	<5.0	<5.0	150
	10/21/2011	18.7	<5.0	20.6	<5.0	<5.0	59
	2/15/2012	23.8	<5.0	6.0	<5.0	<5.0	21
	4/24/2012	11.9	<5.0	10.6	<5.0	<5.0	45.3
MMW-C-02S*	8/1/2012	<5.0	<5.0	8.9	<5.0	<5.0	29.2
	11/15/2012	24.6	<5.0	10.9	<5.0	<5.0	26.7
	11/20/2008	<5.0	<5.0	<5.0	<5.0	<5.0	<2.0
	3/17/2009	<5.0	<5.0	<5.0	<5.0	<5.0	<2.0
	6/18/2009	<5.0	<5.0	<5.0	<5.0	<5.0	<2.0
	8/6/2009	<5.0	<5.0	<5.0	<5.0	<5.0	<2.0
	11/3/2009	<5.0	<5.0	<5.0	<5.0	<5.0	<2.0
	2/3/2010	<5.0	<5.0	<5.0	<5.0	<5.0	<2.0
	4/21/2010	<5.0	<5.0	<5.0	<5.0	<5.0	<2.0
	7/22/2010	<5.0	<5.0	<5.0	<5.0	<5.0	<2.0
	10/13/2010	<5.0	<5.0	<5.0	<5.0	<5.0	<2.0
	1/19/2011	<5.0	<5.0	<5.0	<5.0	<5.0	<2.0
	4/30/2011	<5.0	<5.0	<5.0	<5.0	<5.0	<2.0
	7/27/2011	<5.0	<5.0	<5.0	<5.0	<5.0	<2.0
MMW-C-16S	10/18/2011	<5.0	<5.0	<5.0	<5.0	<5.0	<2.0
	2/15/2012	<5.0	<5.0	<5.0	<5.0	<5.0	<2.0
	4/24/2012	<5.0	<5.0	<5.0	<5.0	<5.0	<2.0
	8/1/2012	<5.0	<5.0	<5.0	<5.0	<5.0	<2.0
	11/13/2012	<5.0	<5.0	<5.0	<5.0	<5.0	<2.0
	8/6/2012	<5.0	<5.0	<5.0	<5.0	<5.0	<2.0
	11/19/2012	<5.0	<5.0	<5.0	<5.0	<5.0	<2.0

**Table 3**  
**Cumulative Monitoring Well Groundwater Analytical Results**  
**Quarter 4 - 2012**  
**Michigan Plaza**  
**3801-3823 West Michigan Street**  
**Indianapolis, Indiana**  
**MUNDELL Project No.: M01046**

Well ID	Sample Date	PCE	TCE	cis-1,2-DCE	trans-1,2-DCE	Chloroform	Vinyl chloride
		ug/l	ug/l	ug/l	ug/l	ug/l	ug/l
IDEM RISC Industrial Default Cleanup Level - 2006		55	31	1,000	2,000	1,000	4
IDEM RISC Residential Default Cleanup Level - 2006		5	5	70	100	80	2
MMW-P-11S	9/9/2011	76.1	<5.0	5.9	<5.0	<5.0	9.1
	10/24/2011	592	<5.0	<5.0	<5.0	<5.0	2.5
	2/15/2012	658	<5.0	<5.0	<5.0	<5.0	2.3
	5/1/2012	351	<5.0	9.1	<5.0	<5.0	8.5
	8/8/2012	88.1	<5.0	14.7	<5.0	<5.0	11.4
	11/15/2012	538	<5.0	6.5	<5.0	<5.0	18.7
MMW-P-13S	9/9/2011	<5.0	<5.0	<5.0	<5.0	<5.0	8.3
	10/24/2011	<5.0	<5.0	<5.0	<5.0	<5.0	19.8
	2/16/2012	<5.0	<5.0	<5.0	<5.0	<5.0	<2.0
	4/26/2012	<5.0	<5.0	<5.0	<5.0	<5.0	<2.0
	8/7/2012	<5.0	<5.0	<5.0	<5.0	<5.0	8.9
	11/19/2012	<5.0	<5.0	<5.0	<5.0	<5.0	3.6
MMW-P-14S	2/16/2012	<5.0	<5.0	<5.0	<5.0	<5.0	<2.0
	4/26/2012	<5.0	<5.0	<5.0	<5.0	<5.0	<2.0
	8/7/2012	<5.0	<5.0	<5.0	<5.0	<5.0	<2.0
<b>Deep Wells</b>							
MMW-C-02D*	2/15/2012	<5.0	<5.0	<5.0	<5.0	<5.0	30.7
	4/26/2012	<5.0	<5.0	<5.0	<5.0	<5.0	55.1
	8/8/2012	<5.0	<5.0	<5.0	<5.0	<5.0	95.1
	11/19/2012	<5.0	<5.0	<5.0	<5.0	<5.0	125
MMW-C-16D	8/6/2012	<5.0	<5.0	<5.0	<5.0	<5.0	224
	11/19/2012	<5.0	<5.0	<5.0	<5.0	<5.0	349
MMW-C-17D	8/8/2012	<5.0	<5.0	<5.0	<5.0	<5.0	2.7
	11/20/2012	<5.0	<5.0	<5.0	<5.0	<5.0	<2.0
MMW-P-11DR	2/15/2012	<5.0	<5.0	8.4	<5.0	<5.0	95.1
	5/1/2012	<5.0	<5.0	8.5	<5.0	<5.0	102
	8/7/2012	<5.0	<5.0	11.7	<5.0	<5.0	102
	11/15/2012	<5.0	<5.0	10.4	<5.0	<5.0	117
MMW-P-13D	9/9/2011	<5.0	<5.0	<5.0	<5.0	<5.0	139
	10/24/2011	<5.0	<5.0	<5.0	<5.0	<5.0	116
	2/16/2012	<5.0	<5.0	<5.0	<5.0	<5.0	155
	4/26/2012	<5.0	<5.0	<5.0	<5.0	<5.0	132
	8/7/2012	<5.0	<5.0	<5.0	<5.0	<5.0	167
	11/19/2012	<5.0	<5.0	<5.0	<5.0	<5.0	154
MMW-P-14D	2/16/2012	<5.0	<5.0	<5.0	<5.0	<5.0	49.6
	4/26/2012	<5.0	<5.0	<5.0	<5.0	<5.0	49.5
	8/7/2012	<5.0	<5.0	<5.0	<5.0	<5.0	58.1
	11/20/2012	<5.0	<5.0	<5.0	<5.0	<5.0	58.3

Notes:

All Values Over IDEM RISC Default Industrial Cleanup Level in **RED**.

All Values Over IDEM RISC Default Residential Cleanup Level in **BLUE**.

PCE = Tetrachloroethene; TCE = Trichloroethene; cis-1,2-DCE = cis-1,2-Dichloroethene; trans-1,2-DCE = trans-1,2-Dichloroethene.

Green Shading indicates areas that appear to be undergoing reductive dechlorination due to CAP-18 Injections.

"J" designation indicates concentration was estimated due to high concentration of one parameter requiring dilution on other parameter quantitations.

All analytical results presented in micrograms per liter (ug/L).

\*MMW-C-02 is now known as MMW-C-02S and MMW-C-02D is a new well.

**Table 4**  
Cumulative Groundwater Analytical Data for Enhanced Anaerobic Bioremediation  
Quarter 4 - 2012  
Michigan Plaza  
3801-3823 West Michigan Street  
Indianapolis, Indiana  
MUNDELL Project No.: M01046

Well ID	Sample Date	pH	Dissolved Oxygen	Oxidation Reduction Potential	Conductivity	Nitrogen, Nitrate	Nitrogen, Nitrite	Iron	Total Organic Carbon	Sulfate	Acetic Acid	Butyric Acid	Hexanoic Acid	i-Hexanoic Acid	i-Pentanoic Acid	Lactic Acid and HIBA	Pentanoic Acid	Propionic Acid	Pyruvic Acid	Ethane	Ethene	Methane		
		-	ug/L	mV	uS/cm						mg/L													
		FIELD MEASUREMENTS										LAB RESULTS												
MMW-1S	2/22/2007	8.00	4,800	290	920.0																			
	9/19/2007	7.20	3,100	240	1100.0																			
	12/13/2007		6,400	430	910.0																			
	3/21/2008		1,650	230	3752.6	8.3																		
	6/3 & 6/6/2008		1,286		3346.1	2.5																		
	9/11/2008					5.8																		
	11/20/2008	6.80	824	533	3044.0	<0.10																		
	3/16/2009	6.70	4,879	484	2794.0	7.3																		
	6/16/2009					9.3																		
	8/5/2009					<0.10																		
	11/2/2009	6.68	1,900	-28	1235.4	<0.10															0.12	0.18	14,000	
	2/3/2010	6.68	5,359	-47	1163.7	<0.10															0.086	0.10	18,000	
	4/22/2010	6.78	2,753	-43	1309.1	9.6																		
	7/21 & 7/22/2010	6.56	2,413	18	1543.3	5.6																		
	10/1/2010	6.61	5,576	-229	1518.3	<0.10																		
	1/19/2011	6.84	2,245		1190.3	<0.10																		
	5/4/2011	6.77	2,771	-79	1258.1	19.3	<0.10	0.0	1.8	35.0	0.12	<0.050	<0.050	<0.050	<0.15	0.38	<0.070	0.072	<0.15	<0.025	0.048	12,000		
	7/28/2011	6.56	730	-179	1474.0	<0.10	<0.10	0.0	3.1	96.0	0.25	<0.050	<0.050	<0.15	0.87	<0.070	0.068	<0.15	<0.025	0.160	9,000			
	10/19/2011	6.76	170	-60	1172.0	<0.10	<0.10	2.3	1.7	56.2	0.083	<0.050	<0.050	<0.15	<0.10	<0.070	0.064	<0.15	0.029	0.280	13,000			
	2/14/2012	6.78	2,024	71	1066.0	45.0	<0.80	0.0	2.6	40.8	0.010 J	<0.050	<0.050	<0.15	0.067 J	<0.070	<0.050	<0.15	0.039	200				
	4/25/2012	6.62	341	30	1198.0	19.9	<0.40	0.0	2.6	51.0	0.042 J	<0.050	<0.050	0.910	<0.15	0.14	<0.070	<0.050	<0.15	0.011J	2.5	9,000		
	8/2/2012	6.73	113	9	1054.0	<0.10			0.2	2.3	122	0.013J	<0.050	<0.050	<0.15	0.071J	<0.070	<0.050	<0.15	0.024J	1.9	15,000		
	11/15/2012	6.53	343	72	1314.0	3.4	<0.10	0.0	3.1	62	0.040J	<0.050	<0.050	<0.15	0.032J	<0.070	<0.050	<0.15	0.034	0.11	390			
*MMW-2S	6/2/2008	7.03				867.7																		
	4/22/2010	7.16	7,865	107	786.4																			
	4/30/2011	7.29	9,482	21	619.5																			
	4/23/2012	7.19	5,290	61	694.0																			
*MMW-3S	6/6/2008	7.02	505		2673.1																			
	4/20/2010	7.21	454	75	932.6																			
	5/4/2011	7.17	587	-228	892.3																			
	4/23/2012	7.15	1,018	-54	893.3																			
*MMW-4D	6/2/2008	6.95	153		1541.2																			
	4/20/2010	7.06	379	0	1209.8																			
	4/29/2011	7.07	764	-104	1227.6																			
	2/14/2012	7.08	595	-71	1117.0																			
	4/23/2012	7.15	242	-110	1290.0																			
	7/31/2012	7.06	181	-90	1530.0																			
	11/13/2012	6.87	625	-96	1693.0																			
*MMW-5D	6/2/2008	7.14			1090.6																			
	4/20/2010	7.13	304	126	1064.0																			
	4/29/2011	7.31	266	-233	1472.3																			
	4/23/2012	7.53	243	-116	667.8																			
	6/6/2008	7.42	514		2907.3																			
*MMW-6D	4/20/2010	7.41	362	51	1060.9																			
	4/29/2011	7.32	142	-251	1238.8																			
	2/14/2012	7.19	671	-34	697.9																			
	4/23/2012	7.45	95	-100	733.1																			
	7/31/2012	7.32	153	-136	767.3																			
	11/13/2012	7.11	455	-134	819.5																			
	6/6/2008	6.38	441		3119.3																			
*MMW-7S	4/20/2010	6.84	637	200	1013.2																			
	5/4/2011	6.85	1,321	-205	1080.1																			
	4/26/2012	7.14	36	-114	632.9																			
	9/19/2007	7.70	2,300	-43	780.0																			
	12/13/2007	6.00		220	1.5																			
MMW-8S	3/20/2008		180		0.3																			
	6/6/2008		1,271		3385.2																			
	11/20/2008	7.05	487	515	2761.4																			
	3/16/2009	6.58	2,188	698	2647.0																			
	8/5/2009	7.08	2,439	-160	1024.3																			
	11/2/2009	7.02	1,805	-71	955.4																			
	2/3/2010	7.00	4,638	-49	840.9																			
	4/22/2010	7.06	1,303	-47	891.8																			
	7/21/2010	6.95	1,709	-32	995.1																			
	10/12/2010	7.06	124	-274	879.8																			
	1/19/2011	6.71	969		1002.3																			
	4/30/2011	6.83	200	-164	1905.7	16.3	<0.40	2.5	2.2	108	0.10	<0.050	<0.050	<0.050	<0.15	0.22	<0.070	0.065	<0.15	0.07	33.0	7,600		
	7/28/2011	6.58	2,202	-47	2259.3	<0.10	<0.10	3.5	1.1	227	<0.70	<0.050	<0.050	<0.15	0.20	<0.070	<0.050	<0.15	0.16	26.0	8,500			
	10/24/2011	7.01	190	-90	1016.0	<0.10	<0.10	3.8	1.4	250	<0.70	<0.050	<0.050	<0.15	0.45	<0.070	<0.050	<0.15	0.18	78.0	20,000			
	2/14/20																							

**Table 4**  
**Cumulative Groundwater Analytical Data for Enhanced Anaerobic Bioremediation**  
**Quarter 4 - 2012**  
**Michigan Plaza**  
**3801-3823 West Michigan Street**  
**Indianapolis, Indiana**  
**MUNDELL Project No.: M01046**

Well ID	Sample Date	pH	Dissolved Oxygen	Oxidation Reduction Potential	Conductivity	Nitrogen, Nitrate	Nitrogen, Nitrite	Iron	Total Organic Carbon	Sulfate	Acetic Acid	Butyric Acid	Hexanoic Acid	i-Hexanoic Acid	i-Pentanoic Acid	Lactic Acid and HIBA	Pentanoic Acid	Propionic Acid	Pyruvic Acid	Ethane	Ethene	Methane	
		-	ug/L	mV	uS/cm	mg/L												ug/l					
		FIELD MEASUREMENTS												LAB RESULTS									
MMW-9S	9/20/2007	7.70	3,000	260	1500.0																		
	12/12/2007	9,300	180	1300.0																			
	3/21/2008	44	918	5173.4																			
	6/6/2008	6.86			1223.7	<0.10				230	3.0	<0.070	<0.10	<0.10	<0.070	0.28	<0.070	1.1	0.22	0.10	0.48	4,400	
	9/11/2008					<0.10				154													
	11/20/2008	6.49	419	558	4141.3	<0.10				152													
	3/16/2009	6.77	4,601	222	3678.1	<0.10				74.2													
	6/16/2009				12.0	<0.10				237													
	8/5/2009					<0.10				208													
	11/2/2009	6.56	1,861	35	1396.4	<0.10				135									0.13	160	6,200		
	2/3/2010	6.55	5,596	11	1372.2	<0.10				116									0.12	150	9,400		
	2/4/2010																						
	4/22/2010	6.57	1,456	-61	2012.4	<0.10				94.0													
	7/21/2010	6.58	3,403	-60	1485.9	<0.10				125													
	10/12/2010	6.56	564	-308	1540.1	<0.10				122													
	1/19/2011	6.90	2,815		1500.3	0.22				83.2	<0.070	<0.050	<0.050	<0.050	<0.15	0.21 B	<0.070	<0.050	<0.15				
	5/4/2011	6.69	235	-255	1878.6	<0.10	<0.10	6.0	3.8	189	0.094	<0.050	<0.050	<0.050	<0.15	0.34	<0.070	0.06	<0.15	1.5	82.0	12,000	
	7/27/2011	6.52	434	-187	1835.3	<0.10	<0.10	3.2	1.7	217	<0.070	<0.050	<0.050	<0.050	<0.15	0.27	<0.070	<0.050	<0.15	1.6	48.0	16,000	
	10/24/2011	6.62	180	-40	2035.0	<0.10	<0.10	2.3	2.6	164	0.078	<0.050	<0.050	<0.050	<0.15	0.15	<0.070	0.075	<0.15	22.0	1.9	7,000	
	2/13/2012	6.67	103	-180	1671.0	<0.10	0.14	3.8	4.4	125	0.013 J	<0.050	<0.050	<0.050	<0.15	0.034 J	<0.070	<0.050	<0.15	2.0	65.0	12,000	
	4/25/2012	6.64	123	-160	1864.0	<0.10	<0.10	3.0	3.8	176	0.052 J	<0.050	<0.050	<0.050	<0.15	0.13	<0.070	0.016 J	<0.15	2.0	36	7,400	
	8/2/2012	6.58	38	-129	1448.0	<0.10				4.0	90.5	0.036 J	<0.050	<0.050	<0.050	<0.15	0.070 J	<0.070	<0.050	<0.15	0.8	28	17,000
	11/14/2012	6.66	1,504	-81	1224.0	<0.10	<0.10	1.75	4.7	62.5	0.072	<0.050	<0.050	<0.050	<0.15	0.12	<0.070	<0.050	<0.15	1.3	27	5,800	
MMW-10S	9/19/2007	7.40	1,900	260	1400.0																		
	12/12/2007	6,000	250	1300.0																			
	3/21/2008	109			5514.0																		
	6/6/2008	6.70	230		1604.6																		
	9/10/2008	6.46	308		4517.3																		
	11/20/2008	6.61	545	585	4320.5																		
	3/16/2009	6.93	5,003	159	3510.4																		
	11/2/2009	6.64	1,970	-15	1683.6																		
	2/3/2010	6.63	5,474	-43	1547.1																		
	4/22/2010	6.61	1,396	-91	1835.1																		
	7/20/2010	6.62	2,423	-56	1806.6																		
	10/12/2010	6.64	951	-261	1852.2																		
	1/19/2011	6.91	2,654		1523.3																		
	5/4/2011	6.67	243	-247	1630.2	<0.10	<0.10	4.5	3.0	368	0.083	<0.070	<0.10	<0.10	<0.070	0.40	<0.070	0.063	<0.15	0.028	14.0	9,700	
	7/27/2011	6.58	513	-158	1,734.6	<0.10	<0.10	3.0	3.4	414	<0.070	<0.070	<0.10	<0.10	0.150	0.28	<0.070	0.049	<0.15	0.15	29.0	13,000	
	10/19/2011	6.73	200	-70	1,646.0	<0.10	<0.10	2.9	2.6	130	<0.070	<0.070	<0.10	<0.10	<0.070	0.12	<0.070	0.069	<0.15	0.084	12.0	10,000	
MMW-11S	2/14/2012	6.71	169	-81	1,730.0	<0.10	<0.10	4.9	4.3														

**Table 4**  
Cumulative Groundwater Analytical Data for Enhanced Anaerobic Bioremediation  
Quarter 4 - 2012  
Michigan Plaza  
3801-3823 West Michigan Street  
Indianapolis, Indiana  
MUNDELL Project No.: M01046

**Table 4**  
**Cumulative Groundwater Analytical Data for Enhanced Anaerobic Bioremediation**  
**Quarter 4 - 2012**  
**Michigan Plaza**  
**3801-3823 West Michigan Street**  
**Indianapolis, Indiana**  
**MUNDELL Project No.: M01046**

Well ID	Sample Date	pH	Dissolved Oxygen	Oxidation Reduction Potential	Conductivity	Nitrogen, Nitrate	Nitrogen, Nitrite	Iron	Total Organic Carbon	Sulfate	Acetic Acid	Butyric Acid	Hexanoic Acid	i-Hexanoic Acid	i-Pentanoic Acid	Lactic Acid and HIBA	Pentanoic Acid	Propionic Acid	Pyruvic Acid	Ethane	Ethene	Methane
		-	ug/L	mV	uS/cm	mg/L												ug/l				
		FIELD MEASUREMENTS																		LAB RESULTS		
MMW-15S	2/15/2012	7.09	426	38	935.4																	
	4/26/2012	7.33	126	-13	804.3																	
	8/6/2012	7.02	167	119	878.8																	
	11/21/2012	6.96	395	105	859.0																	
MMW-15D	2/15/2012	7.33	422	-94	998.1																	
	4/26/2012	7.00	1,384	-6	920.5																	
	8/6/2012	7.39	59	-135	702.0																	
	11/21/2012	7.39	233	-149	649.0																	
MMW-P-01	3/20/2008		21		5619.1																	
	6/7/2008		1,252		0.4																	
	11/19/2008	6.72	221																			
	3/17/2009	6.79	929	468	3419.4																	
	11/3/2009	6.74	1,774	-48	1824.2																	
	2/4/2010	6.87	697	-132	1530.4																	
	4/22/2010	7.07	1,376	-255	1493.8																	
	7/7/2010										2.5	<0.05	<0.050	<0.050	<0.15	<0.10	<0.070	<0.050	<0.15			
	7/21/2010	6.78	2,113	-130	1421.3																	
	10/14/2010	6.76	203	-164	1382.5																	
	1/20/2011	6.79	1,354		1609.8																	
	5/5/2011	6.68	1,003	-176	1977.6	1.9	0.15	2.4	6.3	285	0.10	<0.070	<0.10	<0.10	<0.070	0.45	<0.070	0.071	<0.15	0.12	240	3,000
	7/28/2011	6.70	628	-161	1508.8	<0.10	<0.10	3.2	3.4	145	<0.070	<0.050	<0.050	<0.15	0.28	<0.070	0.050	<0.15	0.76	670	13,000	
	10/24/2011	6.76	120	-90	1694.0	<0.10	<0.10	5.0	2.6	81.5	1.0	<0.050	<0.050	<0.050	<0.15	0.82	<0.070	0.088	<0.15	0.72	1,600	12,000
	2/13/2012	6.77	89	-200	1737.0	<0.10	<0.10	2.9	3.8	56.0	0.021 J	<0.050	<0.050	<0.050	<0.15	0.047 J	<0.070	<0.050	<0.15	0.65	1,700	14,000
	4/25/2012	6.71	49	-205	1698.0	<0.10	<0.10	4.25	3.3	80.0	0.044 J	<0.050	<0.050	<0.050	<0.15	0.086 J	<0.070	<0.050	<0.15	0.6	1,300	13,000
	8/2/2012	6.74	56	-90	1901.0	<0.10		3.20	4.5	45.8	0.022 J	<0.050	<0.050	<0.050	<0.15	0.097 J	<0.070	<0.050	<0.15	0.63	1,500	15,000
	11/14/2012	6.65	277	-103	1869.0	<0.10	<0.10	2.25	3.2	106	0.058 J	<0.050	<0.050	<0.050	<0.15	0.050 J	<0.070	<0.050	<0.15	0.43	540	10,000
MMW-P-02	3/20/2008		155		4637.4																	
	6/7/2008		1,180		4112.8																	
	9/11/2008	6.88	101		0.3																	
	11/19/2008	6.85	574																			
	3/17/2009	6.70	852	858	3641.0																	
	11/3/2009	6.97	2,066	98	1006.2																	
	2/4/2010	6.82	693	272	1324.1																	
	4/22/2010	6.99	148	256	1346.3																	
	7/21/2010	6.92	1,806	-10	1121.8																	
	10/13/2010	6.92	281	-209	1089.7																	
	1/19/2011	6.74	1,617		1256.8																	
	5/4/2011	6.92	321	-245	1263.9	<0.10	<0.10	1.8	1.7	33.2	0.13	<0.070	<0.10	<0.10	<0.070	0.32	<0.070	0.076	<0.15	1.1	1,600	17,000
	7/27/2011	6.86	322	-225	1083.8	<0.10	<0.10	2.5	1.0	190	<0.070	<0.050	<0.050	<0.150	0.28	<0.070	<0.050	<0.15	1.2	240	4,300	
	10/19/2011	6.93	210	-50	1174.0	<0.10	<0.10	2.2	1.4	84.2	0.08	<0.050	<0.050	<0.050	<0.150	0.44	<0.070	0.069	<0.15	1.4	670	13,000
	2/13/2012	6.78	1055	-5	1285.0	0.12	<0.10	3.0	3.3	85.5	0.43	<0.050	<0.050	<0.050	<0.150	0.027 J	<0.070	<0.050	<0.15	1.4	140</	

**Table 4**  
 Cumulative Groundwater Analytical Data for Enhanced Anaerobic Bioremediation  
 Quarter 4 - 2012  
 Michigan Plaza  
 3801-3823 West Michigan Street  
 Indianapolis, Indiana  
 MUNDELL Project No.: M01046

Well ID	Sample Date	pH	Dissolved Oxygen	Oxidation Reduction Potential	Conductivity	Nitrogen, Nitrate	Nitrogen, Nitrite	Iron	Total Organic Carbon	Sulfate	Acetic Acid	Butyric Acid	Hexanoic Acid	i-Hexanoic Acid	i-Pentanoic Acid	Lactic Acid and HIBA	Pentanoic Acid	Propionic Acid	Pyruvic Acid	Ethane	Ethene	Methane				
		-	ug/L	mV	uS/cm	mg/L												ug/l								
		FIELD MEASUREMENTS												LAB RESULTS												
MMW-P-03D	3/20/2008	56			1718.8	<0.10				46.0	53.0	0.43	<0.10	<0.10	0.23	1.2	0.380	24.0	0.85	0.39	0.94	1,200				
	6/5 & 6/6/2008					<0.10				22.3																
	9/11/2008					<0.10				<5.0																
	11/19/2008					<0.10																				
	3/17/2009	6.65	806	757	3253.2	<0.10			<5.0																	
	6/17/2009					<0.10				6.8																
	8/6/2009					<0.10				32.1																
	11/3/2009	6.83	1,791	-48	1406.3	<0.10			<5.0											2.2	4.8	17,000				
	2/4/2010	6.67	661	64	1360.5	<0.10			<5.0											2.7	8.3	25,000				
	4/22/2010	6.88	143	-16	1143.8	<0.10			<5.0																	
	7/21/2010	6.81	2,235	-125	1084.8	<0.10			6.8																	
	10/13/2010	6.73	269	-246	1358.0	<0.10			<5.0																	
	1/19/2011	6.28	2,351		1149.7	<0.10				25.8	0.60	<0.050	<0.050	<0.050	<0.15	<0.10	<0.070	<0.050	<0.15							
	5/4/2011	6.82	267	-294	1194.9	<0.10	<0.10	2.9	3.8	35.5	0.22	<0.070	<0.10	<0.10	<0.070	0.48	<0.070	0.084	<0.15	0.40	110	14,000				
	7/27/2011	6.81	367	-192	1284.7	<0.10	<0.10	5.3	1.8	25.6	0.34	<0.050	<0.050	<0.050	<0.15	0.25	<0.070	0.067	<0.15	25.0	1,400	26,000				
	10/18/2011	6.87	150	-150	1377.0	<0.10	<0.10	2.9	9.5	10.7	18.0	0.13	<0.050	<0.050	<0.15	<0.10	<0.070	1.0	<0.15	5.8	2,200	20,000				
	2/13/2012	6.90	200	-26	1158.0	<0.10	<0.10	3.1	10.1	<5.0	18	0.092	<0.050	<0.050	0.084 J	0.46 J	<0.070	0.50	<0.15	5.0	2,400	24,000				
	4/25/2012	6.81	51	-229	1374.0	<0.10	<0.10	3.2	25.0	<5.0	52	0.68	<0.050	<0.050	0.22	1.2	<0.070	1.0	0.055 J	8.4	2,400	24,000				
	8/1/2012	6.82	35	-159	1415.0	<0.10		4.5	7.3	<5.0	8.6	0.046 J	<0.050	<0.050	<0.15	<0.10	<0.070	0.38	<0.15	18.0	3,200	21,000				
	11/14/2012	6.75	157	-189	1085.0	<0.10	<0.10	2.5	11.3	8.8	16.0	0.083	<0.050	<0.050	0.055 J	<0.10	<0.070	0.43 J	<0.15	47.0	820	20,000				
MMW-P-04	3/20/2008		233		0.3																					
	6/5/2008	6.87			1416.9																					
	9/11/2008	7.03			0.5																					
	11/19/2008	6.96	811																							
	2/12/2010	6.89	1,005	199	827.4																					
	4/21/2010	6.95	237	-47	808.1																					
	7/22/2010	6.74	3,591	-40	964.2																					
	10/13/2010	6.68	869	-203	1025.3																					
	5/5/2011	7.07	1,389	-185	1036.9	1.2	0.18	0.0	43.0	26.9	2.3	0.10	0.64	0.24	<0.070	1.4	<0.070	0.46	<0.15	0.044	11.0	10,000				
	7/28/2011	6.67	1,011	-174	1363.1	<0.10	<0.10	4.7	18.1	<0.10	24	0.22	<0.050	<0.050	<0.15	<1.0	<0.070	1.7	<0.15	0.44	570	18,000				
	10/24/2011	6.87	520	-150	874.0	<0.10	<0.10		11.6	39.8	5.0	0.11	<0.050	<0.050	<0.15	0.3	<0.070	0.31	<0.15	1.7	26.0	18,000				
	2/17/2012	6.81	990	-200	694.8	<0.10	<0.10	2.5	5.5	<5.0	1.6	0.072	<0.050	<0.050	<0.15	0.2	<0.070	0.33	<0.15	0.2	6.4	19,000				
	5/1/2012	6.70	994	-202	769.2	<0.10	<0.10	2.1	4.2	15.4	1.4	0.053	<0.050	<0.050	<0.15	<1.0	<0.070	0.029 J	<0.15	0.1	3.2	19,000				
	8/8/2012					Insufficient water to sample																				
	11/21/2012	6.82	973	-227	726.5			3.1																		
MMW-P-05	3/20/2008					6086.2			3.1																	
	6/5/2008	6.86				1150.6																				

**Table 4**  
Cumulative Groundwater Analytical Data for Enhanced Anaerobic Bioremediation  
Quarter 4 - 2012  
Michigan Plaza  
3801-3823 West Michigan Street  
Indianapolis, Indiana  
MUNDELL Project No.: M01046

Well ID	Sample Date	pH	Dissolved Oxygen	Oxidation Reduction Potential	Conductivity	Nitrogen, Nitrate	Nitrogen, Nitrite	Iron	Total Organic Carbon	Sulfate	Acetic Acid	Butyric Acid	Hexanoic Acid	i-Hexanoic Acid	i-Pentanoic Acid	Lactic Acid and HIBA	Pentanoic Acid	Propionic Acid	Pyruvic Acid	Ethane	Ethene	Methane	
		-	ug/L	mV	uS/cm					mg/L										ug/l			
		FIELD MEASUREMENTS										LAB RESULTS											
MMW-P-06	3/20 & 3/21/2008	29	900	4293.5						62.6													
	6/5 & 6/6/2008	7.07		980.4	<0.10					30.5	60.0	1.7	<0.10	<0.10	0.21	1.4	1.2	29.0	0.44	0.47	0.54	290	
	9/11/2008	6.82		0.7	<0.10					39.1													
	11/19/2008	6.85	715		<0.10					130													
	3/17/2009	6.69	1,063	710	3884.4	<0.10				9.4													
	6/17/2009				<0.10					61.7													
	8/6/2009				<0.10					29.7													
	11/3/2009	6.89	1,631	-105	1276.4	<0.10				73.2										1.9	200	18,000	
	2/4/2010	7.04	725	-86	927.1	<0.10				10.3										0.66	300	15,000	
	4/22/2010	6.93	1,405	-106	1129.2	0.10				15.3													
	7/21/2010	6.96	2,001	-112	1448.3	<0.10				38.7													
	10/14/2010	6.94	162	-121	1194.9																		
	1/20/2011	6.80	1,062		1263.5	<0.10				65.8	<0.070	<0.050	<0.050	<0.050	<0.15	<0.10	<0.070	<0.050	<0.15		0.51	2,400	17,000
	5/4/2011	6.89	225	-296	1338.1																		
	7/28/2011	6.85	812	-198	1302.6																0.92	3,700	20,000
	10/24/2011	6.92	160	-90	1169.0																0.78	2,500	14,000
	2/13/2012	6.90	141	-213	1132.0	<0.10	<0.10	2.0	3.9	38.0	0.370	<0.050	<0.050	<0.050	<0.15	0.048 J	<0.070	<0.050	<0.15	0.87	1,800	17,000	
	4/26/2012	6.64	71	-231	172.0	<0.10	<0.10	3.25	4.4	65.5	1.200	<0.050	<0.050	<0.050	<0.15	0.240	<0.070	0.031	<0.15	1.0	1,300	17,000	
	8/2/2012	6.85	74	-96	1283.0	<0.10		2.8	3.7	54.5	0.069J	<0.050	<0.050	<0.050	<0.15	<0.10	<0.010	<0.050	<0.15	0.92	1,100	15,000	
	11/14/2012	6.82	204	-191	1237.0	<0.10	<0.10	3.1	2.3	82.5	0.063J	<0.050	<0.050	<0.050	<0.15	<0.10	<0.010	<0.050	<0.15	0.74	500	16,000	
MMW-P-07	3/21/2008	9	937	6055.8																			
	6/7/2008		1,200		5032.7																		
	9/11/2008	6.74		0.7																			
	11/19/2008	6.53	846																				
	3/17/2009	6.83	880	745	4022.3																		
	11/3/2009	6.62	1,745	-72	2224.1																		
	2/4/2010	6.72	721	-92	1800.3																		
	4/22/2010	6.68	1,400	-154	1924.8																		
	7/22/2010	6.60	3,369	-55	1605.5																		
	10/14/2010	6.59	359	-148	2187.6																		
	1/20/2011	6.74	1,377		1347.0																		
	5/4/2011	6.67	349	-242	1632.1	<0.10	<0.10	3.0	3.9	97.5	2.0	<0.050	<0.050	<0.050	<0.15	0.50	<0.070	0.15	<0.15	0.049	520	6,000	
	7/28/2011	8.33	765	-161	2098.5	<0.10	<0.10	3.8	4.0	33.1	3.9	0.14	<0.050	<0.050	<0.15	0.98	<0.070	0.23	<0.15	0.12	480	8,100	
	10/24/2011	6.66	110	-60	1492.0	<0.10	<0.10	3.8	2.1	31.6	0.078	<0.050	<0.050	<0.050	<0.15	0.46	<0.070	0.071	<0.15	0.31	330	12,000	
	2/13/2012	6.79	541	-167	1754.0	<0.10	<0.10	2.9	3.3	82.5	0.52	0.041 J	<0.050	<0.050	<0.15	0.023 J	<0.070	<0.050	<0.15	0.26	190	12,000	
	4/25/2012	6.69	77	-209	1841.0	<0.10	<0.10	4.25	3.3	73.5	0.020 J	<0.050	<0.050	<0.050	<0.15	0.051 J	<0.070	<0.050	<0.15	0.28	360	8,900	
	8/2/2012	6.71	84	-96	1747.0	<0.10		4.6	3.5	30.5	0.033J	<0.050	<0.050	<0.050	<0.15	0.037J	<0.070	<0.050	<0.15	0.46	95	16,000	
	11/12/2012	6.63	275	-120	2295.0	<0.10	<0.10	2.5	4.0	81.0	0.051J	<0.050	<0.050	<0.050	<0.15	0.055J	<0.070	<0.050	<0.15	0.13	180	6,200	
MMW-P-08	3/20 & 3/21/2008	2.29	245		3645.7					129													
	6/5 & 6/6/2008	7.00			1118.2	0.12				<5.0	0.12	<0.070	<0.10	<0.10	<0.070	0.22	<0.070	<0.070	<0.070	0.30	2.0	2,800	
	9/10 & 9/11/2008	7.29	467		0.3	<0.10				<5.0													
	11/19/2008	7.00	1,129			<0.10				7.2													
	3/17/2009	6.77	876	674	4083.5	<0.10				5.1													
	6/17/2009					<0.10				5.0													
	8/6/2009					<0.10				38.3													
	11/3/2009	6.52	1,676	-74	1547.6	<0.10				23.6										0.081	320	8,000	
	2/4/2010	6.63	631	-86	1629.4					<5.0										0.075	640	17,000	
	4/22/2010	6.74	1,408	-202	1804.3	<0.10				8.5													
	7/22/2010	6.79	3,994	-70	939.3	<0.10				34.0													
	10/14/2010	6.65	395	-175	1923.7	<0.10				<5.0													
	1/20/2011	6.79	1,907		1965.5	<0.10				21.0	19.0	0.27	<0.050	<0.050	<0.15	<0.10	<0.070	2.1	<0.15				
	5/4/2011	6.81	221	-272	920.7	<0.10	<0.10	3.0	6.2	44.5	0.16	0.10	<0.050	<0.050	<0.15	0.26	<0.070	0.077	<0.15	0.34	430	6,800	
	7/27/2011	6.54	597	-146	2323.7	<0.10	<0.10	3.8	3.0	185	0.096	<0.050	<0.050	<0.050	<0.15	0.27	<0.070	<0.050	<0.15	0.098	500	8,400	
	10/24/2011	6.68	110	-90	1308.0	<0.10	<0.10	2.8	2.9	59.0	0.10	<0.050	<0.050	<0.050	<0.15	0.16	<0.070	0.074	<0.15	0.28	210	3,200	
	2/13/2012	6.68	81	-220	1663.0	<0.10	<0.10	2.9	5.5	52.0	0.040 J	<0.050	<0.050	<0.050	<0.15	0.020 J	<0.070	<0.050	<0.15	3.4	220	8,000	
	4/25/2012	6.62	27	-224	1709.0	<0.10	<0.10	3.2	4.6	87.0	0.056 J	<0.050	<0.050	<0.050	<0.15	0.12	<0.070	<0.050	<0.15	11	170	12,000	
	8/2/2012	6.69	19	-111	1623.0	<0.10		4.2	3.9	48.2	0.034J	<0.050	<0.050	<0.050	<0.15	<0.15	<0.070	<0.050	<0.15	4.5	390	9,200	
	11/14/2012	6.61	127	-162	1868.0	<0.10	<0.10	3.10	4.2	36.3	0.030J	<0.050	<0.050	<0.050	<0.15	0.044J	<0.070	<0.050	<0.15	9.30	230	7,000	

**Table 4**  
Cumulative Groundwater Analytical Data for Enhanced Anaerobic Bioremediation  
Quarter 4 - 2012  
Michigan Plaza  
3801-3823 West Michigan Street  
Indianapolis, Indiana  
MUNDELL Project No.: M01046

Well ID	Sample Date	pH	Dissolved Oxygen	Oxidation Reduction Potential	Conductivity	Nitrogen, Nitrate	Nitrogen, Nitrite	Iron	Total Organic Carbon	Sulfate	Acetic Acid	Butyric Acid	Hexanoic Acid	i-Hexanoic Acid	i-Pentanoic Acid	Lactic Acid and HIBA	Pentanoic Acid	Propionic Acid	Pyruvic Acid	Ethane	Ethene	Methane	
		-	ug/L	mV	uS/cm					mg/L													
		FIELD MEASUREMENTS										LAB RESULTS											
MMW-P-09S	3/20/2008	2.49	230		3920.3	1.5				78.7													
	6/5 & 6/6/2008	6.97			963.6	5.1				161	3.5	<0.070	0.26	<0.10	<0.070	0.29	0.14	5.3	<0.070	0.033	<0.025	8.0	
	9/10 & 9/11/2008	7.13	200		0.3	<0.10				114													
	11/19/2008	7.09	1,108			<0.10				133													
	3/17/2009	6.52	1,019	858	2249.3	0.72				82.4													
	6/16/2009					1.1				64.0													
	8/7/2009					0.60				45.7													
	11/3/2009	6.92	2,892	174	810.2	0.78				87.2										<0.025	0.037	6.5	
	2/3 & 2/4/2010	6.94	3,997	-51	701.4	0.58				85.8										<0.025	<0.025	4.7	
	4/22/2010	7.05	2,699	69	640.1	0.62				44.8													
	7/22/2010	7.00	5,477	27	1077.9	0.80				92.4													
	10/13/2010	6.89	1,026	-105	725.6	0.10				57.4													
	1/19/2011	6.56	1,732		711.5	0.10				106	<0.070	<0.050	<0.050	<0.050	<0.15	<0.10	<0.070	<0.050	<0.15				
	4/30/2011	7.12	5,228	0	587.1																		
	7/26/2011	6.78	1,473	-85	882.4																		
	10/18/2011	6.90	760	160	850.9																		
	2/15/2012	6.95	2,621	164	786.3																		
	4/24/2012	7.08	1,364	30	708.7																		
	8/1/2012	6.94	537	88	866.6																		
	11/13/2012	6.93	803	196	678.9																		
MMW-P-09D	3/20/2008	1.40	107		8894.3																		
	6/7/2008		443		3784.4																		
	11/19/2008	6.85	1,106		NS																		
	3/17/2009	6.57	819	834	2616.0																		
	11/3/2009	7.11	1,717	-59	897.8																		
	2/3/2010	7.10	4,243	-78	862.0																		
	4/22/2010	7.12	1,360	-64	884.7																		
	7/22/2010	7.18	3,702	-59	929.0																		
	10/13/2010	7.08	694	-282	903.0																		
	1/19/2011	6.12	1,079		788.7																		
	4/30/2011	7.17	347	-184	851.5																		
	7/26/2011	6.98	567	-198	919.1																		
	10/21/2011	7.17	200	-90	855.0																		
	2/15/2012	7.15	283	-103	830.4																		
	4/24/2012	7.24	254	-128	879.9																		
	8/1/2012	7.16	318	-95	920.5																		
	11/13/2012	7.13	170	-102	861.4																		
MMW-P-10S	3/20/2008	1.73		4589.7	0.52					50.8													
	6/5, 6/6 & 6/7/2008		1,078		3508.2	<0.10				71.8	0.11	<0.070	<0.10	<0.10	<0.070	0.21	<0.070	<0.070	<0.070	0.16	1.3	50.0	
	9/1/2008	7.04	45		0.4	<0.10				111													
	11/19/2008	6.85	1,034			<0.10				34.4													
	3/17/2009	6.77	863	653	3958.2	<0.10				54.6													
	6/17/2009					<0.10				9.4													
	8/6/2009					<0.10				<5.0													
	11/3/2009	6.83	1,566	-112	705.5	<0.10				9.5										0.77	27.0	2,300	
	2/4/2010	6.65	614	-93	1663.5	<0.10				69.2											1.7	230	14,000
	4/22/2010	6.97	1,564	-200	971.3	<0.10				15.8													
	7/21/2010	6.91	1,868	-105	900.8	<0.10				<5.0													
	10/14/2010	6.63	404	-154	1681.7	<0.10				85.8													
	1/20/2011	6.74	1,102		1009.0	0.12				29.2	4.7	0.15	<0.050	<0.050	<0.15	<0.10	<0.070	0.26	<0.15				
	5/5/2011	7.51	101	-341	329.6	<0.10	<0.10	1.8	2.7	17.6	0.16	<0.050	<0.050	<0.050	<0.15	0.37	<0.070	<0.050	<0.15	2.2	6.1	5,800	
	7/27/2011	6.69	543	-170	1583.3	<0.10	<0.10	3.2	3.7	87.9	<0.070	<0.050	<0.050	<0.050	<0.15	0.21	<0.070	0.052	<0.15	1.4	120	13,000	
	10/21/2011	6.90	110	-90	592.0	<0.10	<0.10	2.1	1.7	13.9	0.078	<0.050	<0.050	<0.050	<0.15	<0.10	<0.070	0.070	<0.15	1.8	22.0	4,300	
	2/13/2012	6.90	112	-221	653.0	<0.10	<0.10	3.1	2.3	17.1	0.18	<0.050	<0.050	<0.050	<0.15	0.13	<0.070	<0.050	<0.15	2.8	15	9,000	
	4/25/2012	6.86	45	-233	672.6	<0.10	<0.10	2.5	1.9	15.4	0.075	<0.050	<0.050	<0.050	<0.15	0.092 J	<0.070	<0.050	<0.15	4.0	30	10,000	
	8/2/2012	6.69	50	-115	1721.0	<0.10		3.8	3.6	116	0.014 J	<0.050	0.17	<0.050	<0.15	0.031 J	<0.070	<0.050	<0.15	4.6	75	12,000	
	11/14/2012	6.67	171	-163	1107.0	<0.10	<0.10	2.0	3.1	26.6	<0.070	<0.050	<0.050	<0.050	<0.15	<0.10	<0.070	<0.050	<0.15	2.2	10	7,400	

**Table 4**  
**Cumulative Groundwater Analytical Data for Enhanced Anaerobic Bioremediation**  
**Quarter 4 - 2012**  
**Michigan Plaza**  
**3801-3823 West Michigan Street**  
**Indianapolis, Indiana**  
**MUNDELL Project No.: M01046**

Well ID	Sample Date	pH	Dissolved Oxygen	Oxidation Reduction Potential	Conductivity	Nitrogen, Nitrate	Nitrogen, Nitrite	Iron	Total Organic Carbon	Sulfate	Acetic Acid	Butyric Acid	Hexanoic Acid	i-Hexanoic Acid	i-Pentanoic Acid	Lactic Acid and HIBA	Pentanoic Acid	Propionic Acid	Pyruvic Acid	Ethane	Ethene	Methane
		-	ug/L	mV	uS/cm	mg/L												ug/l				
		FIELD MEASUREMENTS												LAB RESULTS								
MMW-P-10D	6/7/2008	1.71	1,134		4183.6																	
	3/17/2009	6.64	838	574	2733.7																	
	11/3/2009	6.80	1,699	-98	1104.1																	
	2/4/2010	6.78	619	-101	992.6																	
	4/22/2010	7.05	1,371	-192	857.0																	
	7/22/2010	6.83	2,694	-27	913.1																	
	10/14/2010	6.68	351	-165	1341.4																	
	1/20/2011	6.74	1,155		1338.7																	
	5/5/2011	7.08	160	-300	597.7	<0.10	<0.10	1.8	2.8	43.0	0.10	<0.050	<0.050	<0.050	<0.15	<0.10	<0.070	<0.050	<0.15			
	7/27/2011	6.82	539	-162	1073.2	<0.10	<0.10	5.0	2.1	64.1	<0.070	<0.050	<0.050	<0.050	<0.15	0.26	<0.070	<0.050	<0.15	1.2	200	18,000
	10/21/2011	6.86	160	-80	1039.0	<0.10	<0.10	2.3	1.7	55.0	0.10	<0.050	<0.050	<0.050	<0.15	<0.10	<0.070	0.078	<0.15	1.3	580	20,000
	2/13/2012	6.75	210	-184	1233.0	<0.10	<0.10	3.75	3.7	112	0.014 J	0.036 J	<0.050	<0.050	<0.15	0.025 J	<0.070	0.011 J	<0.15	2.6	260	16,000
	4/25/2012	6.79	85	-221	1225.0	<0.10	<0.10	3.5	2.5	76.5	0.036 J	<0.050	<0.050	<0.050	<0.15	0.17	<0.070	<0.050	<0.15	1.7	190	23,000
	8/2/2012	6.83	26	-109	1123.0	<0.10		2.7	2.9	87.5	0.011 J	<0.050	<0.050	<0.050	<0.15	<0.10	<0.070	<0.050	<0.15	1.3	140	20,000
	11/14/2012	6.76	159	-159	1359.0	<0.10	<0.10	2.7	5.0	84.5	<0.070	<0.050	<0.050	<0.050	<0.15	<0.10	<0.070	<0.050	<0.15	2	160	22,000
MMW-P-11S	10/24/2011	6.97	490	-100	802.3	<0.10	<0.10	0.2	1.7	166	0.082	<0.050	<0.050	<0.050	<0.15	0.21	<0.070	0.070	<0.15	6.2	0.097	690
	2/15/2012	6.96	578	-58	913.2	0.60	<0.10	1.7	1.9	132	0.013 J	<0.050	<0.050	<0.050	<0.15	0.072 J	<0.070	<0.070	<0.15	0.15	2.8	1,600
	5/1/2012	6.94	353	-108	860.7	<0.10	<0.10	2.75	1.6	203	0.026 J	<0.050	<0.050	<0.050	<0.15	0.084 J	<0.070	0.014 J	<0.15	5.9	1,300	
	8/7/2012	7.00	31	-61	777.0	<0.10		3.2	1.7	189	0.017 J	<0.050	<0.050	<0.050	<0.15	<0.10	<0.070	<0.050	<0.15	0.22	5.6	960
	11/15/2012	6.77	315	-27	1154.0	<0.10	<0.10	1.2	1.8	148	0.046 J	<0.050	<0.050	<0.050	<0.15	0.035 J	<0.070	<0.050	<0.15	0.18	3.8	5,200
MMW-P-11DR	2/15/2012	7.02	134	-104	1244.0	<0.10	<0.10	3.8	2.0	275	0.031 J	<0.050	<0.050	<0.050	<0.15	0.040 J	<0.070	<0.070	<0.15	1.4	6.8	3,800
	5/1/2012	6.96	233	-97	1269.0	<0.10	<0.10		1.9	275	0.024 J	<0.050	<0.050	<0.050	<0.15	0.079 J	<0.070	<0.050	<0.15	1.1	7.4	1,000
	8/7/2012	6.98	28	-81	1401.0	<0.10		3.1	2.1	219	0.034 J	<0.050	<0.050	<0.050	<0.15	0.042 J	<0.070	<0.050	<0.15	1.3	7.7	590
	11/15/2012	6.87	140	-72	1291.0	<0.10	<0.10		1.8	147	<0.070	<0.050	<0.050	<0.050	<0.15	<0.10	<0.070	<0.050	<0.15	1.2	19	6,200
	10/24/2011	7.05	240	-80	1106.0	<0.10	<0.10	2.1	1.4	156	<0.070	<0.050	<0.050	<0.050	<0.15	<0.10	<0.070	0.070	<0.15	1.3	0.83	24
MMW-P-12S	2/15/2012	7.07	267	-76	1092.0	<0.10	<0.10	3.0	1.7	162	0.010 J	<0.050	<0.050	<0.050	<0.15	0.27	<0.070	<0.070	<0.15	0.92	0.65	94
	5/1/2012	6.97	76	-121	1173.0	<0.10	<0.10		1.6	176	0.026 J	<0.050	<0.050	<0.050	<0.15	0.093 J	<0.070	<0.050	<0.15	0.66	0.26	28
	8/7/2012	7.01	59	-102	1058.0	<0.10		2.7	1.9	135	0.019 J	<0.050	<0.050	<0.050	<0.15	0.040 J	<0.070	<0.050	<0.15	0.85	0.32	17
	11/19/2012	6.97	726	-101	1164.0	<0.10	<0.10	1.2	1.7	146	0.052 J	<0.050	<0.050	<0.050	<0.15	<0.10	<0.070	<0.050	<0.15	0.88	0.67	33
	10/24/2011	7.17	210	-100	1070.0	<0.10	<0.10	2.1	1.9	124	0.22	<0.050	<0.050	<0.050	<0.15	1.2	<0.070	0.13	<0.15	1.5	0.77	26
MMW-P-12D	2/15/2012	7.11	216	-94	1227.0	<0.10	<0.10	2.0	1.9	164	0.0075 J	<0.050	<0.050	<0.050	<0.15	0.040 J	<0.070	<0.070	<0.15	1.2	0.7	18
	5/1/2																					

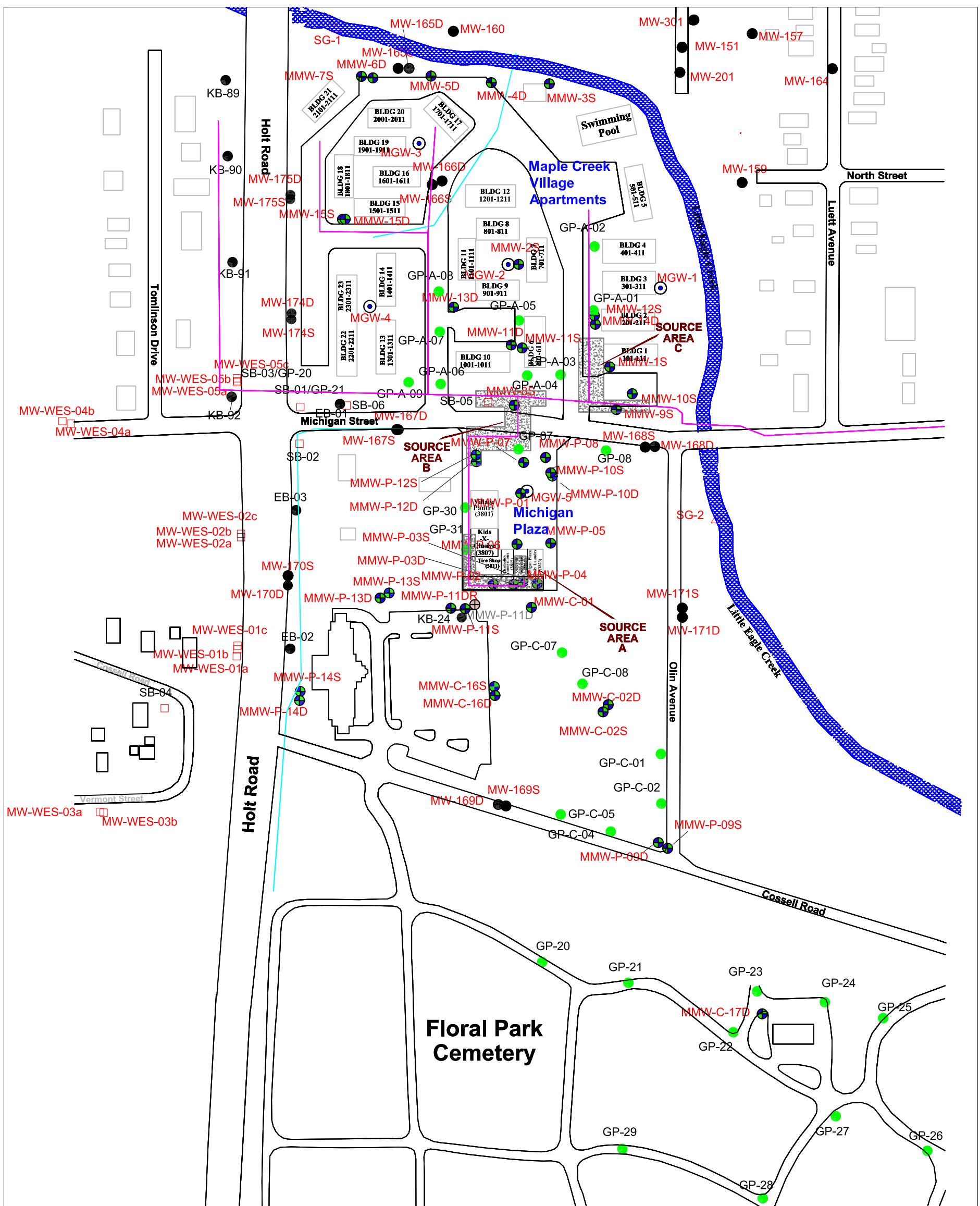
**Table 4**  
Cumulative Groundwater Analytical Data for Enhanced Anaerobic Bioremediation  
Quarter 4 - 2012  
Michigan Plaza  
3801-3823 West Michigan Street  
Indianapolis, Indiana  
MUNDELL Project No.: M01046

**Table 4**  
**Cumulative Groundwater Analytical Data for Enhanced Anaerobic Bioremediation**  
**Quarter 4 - 2012**  
**Michigan Plaza**  
**3801-3823 West Michigan Street**  
**Indianapolis, Indiana**  
**MUNDELL Project No.: M01046**

Well ID	Sample Date	pH	Dissolved Oxygen	Oxidation Reduction Potential	Conductivity	Nitrogen, Nitrate	Nitrogen, Nitrite	Iron	Total Organic Carbon	Sulfate	Acetic Acid	Butyric Acid	Hexanoic Acid	i-Hexanoic Acid	i-Pentanoic Acid	Lactic Acid and HIBA	Pentanoic Acid	Propionic Acid	Pyruvic Acid	Ethane	Ethene	Methane
		-	ug/L	mV	uS/cm	mg/L												ug/l				
		FIELD MEASUREMENTS																		LAB RESULTS		
*MW-171D	6/7/2008	7.32	415		3178.5																	
	4/21/2010	7.07	171	16	846.3																	
	7/22/2010	7.05	4,607	-47	1001.9																	
	4/29/2011	7.01	377	-164	887.8																	
	5/2/2012	6.96	46	-174	891.3																	
	9/10/2008	7.51	477		0.3																	
	11/20/2008	6.79	491	480	2907.9																	
	3/17/2009	6.57	770	693	2702.0																	
	11/3/2009	6.92	1,765	-100	983.5																	
	2/3/2010	6.94	3,818	-59	758.5																	
MMW-C-01	4/21/2010	7.10	174	57	723.4																	
	7/22/2010	6.96	5,588	47	792.0																	
	10/13/2010	6.93	3,883	-29	834.6																	
	1/19/2011	6.77	1,522		741.5																	
	5/5/2011	7.41	9,253	-75	463.2	14.7	<0.40	0.0	<1.0	31.2	0.110	<0.050	<0.050	<0.050	<0.15	0.28	<0.070	<0.050	<0.15	<0.025	<0.025	0.14
	7/27/2011	6.80	707	-190	1156.7	0.79	<0.10	0.0	1.8	113	<0.070	<0.050	<0.050	<0.15	0.26	<0.070	<0.050	<0.15	0.12	170	12,000	
	10/21/2011	6.92	340	-30	756.5	0.79	<0.10	1.2	2.4	89.0	0.10	<0.050	<0.050	<0.050	<0.15	0.37	<0.070	0.066	<0.15	0.081	94	12,000
	2/15/2012	6.98	1,682	-31	780.0	7.7	<0.10	2.0	1.9	73.5	0.0073 J	<0.050	<0.050	<0.050	<0.15	0.034 J	<0.070	<0.050	<0.15	0.22	5.6	10,000
	4/24/2012	7.05	178	-54	791.4	<0.10	<0.10	2.75	2.2	71.0	0.034 J	<0.050	0.27	<0.050	<0.15	0.11	<0.070	<0.050	<0.15	0.20	24	12,000
	8/1/2012	6.97	190	-96	828.6	<0.10		2.2	2.5	36.2	0.0086J	<0.050	<0.050	<0.050	<0.15	0.094J	<0.070	<0.050	<0.15	0.13	3.7	14,000
	11/15/2012	6.50	510	-31	757.3	0.43	<0.10	1.2	2.2	68.0	<0.070	<0.050	<0.050	<0.050	<0.15	<0.10	<0.070	<0.050	<0.15	0.026	2.3	11,000
	11/20/2008	6.97	931	476	2806.7																	
	3/17/2009	6.55	811	867	2506.9																	
	11/3/2009	6.80	1,811	24	784.9																	
MMW-C-02S	2/3/2010	6.77	3,782	76	778.9																	
	4/21/2010	6.92	177	202	786.3																	
	7/22/2010	6.88	2,670	30	755.8																	
	10/13/2010	6.80	212	-175	717.4																	
	1/19/2011	6.58	1,651		705.0	0.14				76.8	<0.070	<0.050	<0.050	<0.050	<0.15	<0.10	<0.070	<0.050	<0.15			
	4/30/2011	6.89	3,184	-17	689.2																	
	7/27/2011	6.72	694	-146	811.9																	
	10/18/2011	6.82	180	80	779.9																	
	2/15/2012	6.83	156	27	747.9																	
	4/24/2012	6.92	212	17	738.5																	
	8/1/2012	6.94	202	-8	657.5																	
MMW-C-02D	11/13/2012	6.27	166	11	665.5																	
	2/15/2012	7.03	165	-105	902.3																	
	4/26/2012	7.03	57	-158	809.9																	
	8/8/2012	8.03	40	-139	918.0																	
MMW-C-16S	11/19/2012	6.93	488	-102	1226.0																	
	8/6/2012	6.69	108	4	1141.0																	
	11/19/2012	6.59	807	5	1373.0																	
MMW-C-16D	8/6/2012	6.96	42	-101	1241.0																	
	11/19/2012	6.92	472	-																		

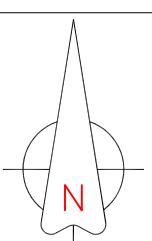
## **FIGURES**

- Figure 1 Site Plan
- Figure 2a Shallow Potentiometric Surface Map – November 12, 2012  
(Excludes Depiction of Groundwater Trough)
- Figure 2b Shallow Potentiometric Surface Map – November 12, 2012  
(Includes Depiction of Groundwater Trough)
- Figure 3a Deep Potentiometric Surface Map – November 12, 2012  
(Excludes Depiction of Groundwater Trough)
- Figure 3b Deep Potentiometric Surface Map – November 12, 2012  
(Includes Depiction of Groundwater Trough)
- Figure 4 Groundwater Analytical Results – Shallow (Fourth Quarter 2012)
- Figure 5 Groundwater Analytical Results – Deep (Fourth Quarter 2012)
- Figure 6 Indicator Compound Trends in Groundwater
- Figure 7 Parent and Daughter Products Distribution in Groundwater
- Figure 8 Vapor Mitigation System Locations
- Figure 9 PCE Concentration Trends & Cumulative Pounds Removed (B1)
- Figure 10 PCE Concentration Trends & Cumulative Pounds Removed (B2)
- Figure 11 PCE Concentration Trends & Cumulative Pounds Removed (B3)
- Figure 12 PCE Concentration Trends & Cumulative Pounds Removed (B4)
- Figure 13 PCE Concentration Trends & Cumulative Pounds Removed (B5)
- Figure 14 PCE Concentration Trends & Cumulative Pounds Removed (B6)
- Figure 15 PCE Concentration Trends & Cumulative Pounds Removed (B7)
- Figure 16 PCE Concentration Trends & Cumulative Pounds Removed  
(B1 through B4)
- Figure 17 PCE Concentration Trends & Cumulative Pounds Removed  
(B5 through B7)



I FGFND

- |                      |   |   |   |       |   |                |
|----------------------|---|---|---|-------|---|----------------|
|                      |  | Fence                                   |  | GP-29 |  | Soil Boring    |
| MMW-P-06             |  | MUNDELL Monitoring Well                 |   |       |  | Sanitary Sewer |
| MW-160/<br>KB-90     |  | ENVIRON Monitoring Well/Soil<br>Boring  |   |       |  | Storm Sewer    |
| MW-WES-O1A/<br>SB-02 |  | U.S. EPA Monitoring Well/Soil<br>Boring |   |       |   |                |
| SG-1                 |  | Stream Gauge Location                   |   |       |   |                |
| MGW-Q1               |  | MUNDELL Soil Gas Well                   |   |       |   |                |



**feet**

**RON/Keramida Monitoring  
Locations Referenced from  
amida Environmental, Inc.**

**Project No. 2829**

**March 13, 2002**



**Mundell**  
Consulting Professionals  
for the Earth and the Environment

*110 South Downey Avenue  
Indianapolis, Indiana 46219  
317-630-9060, fax 317-630-9065  
[www.MaynardAssociates.com](http://www.MaynardAssociates.com)*

**Project Number:**  
M01046

**Drawing File:**  
3Q12 QMR

**Date Prepared:**  
12-11-12

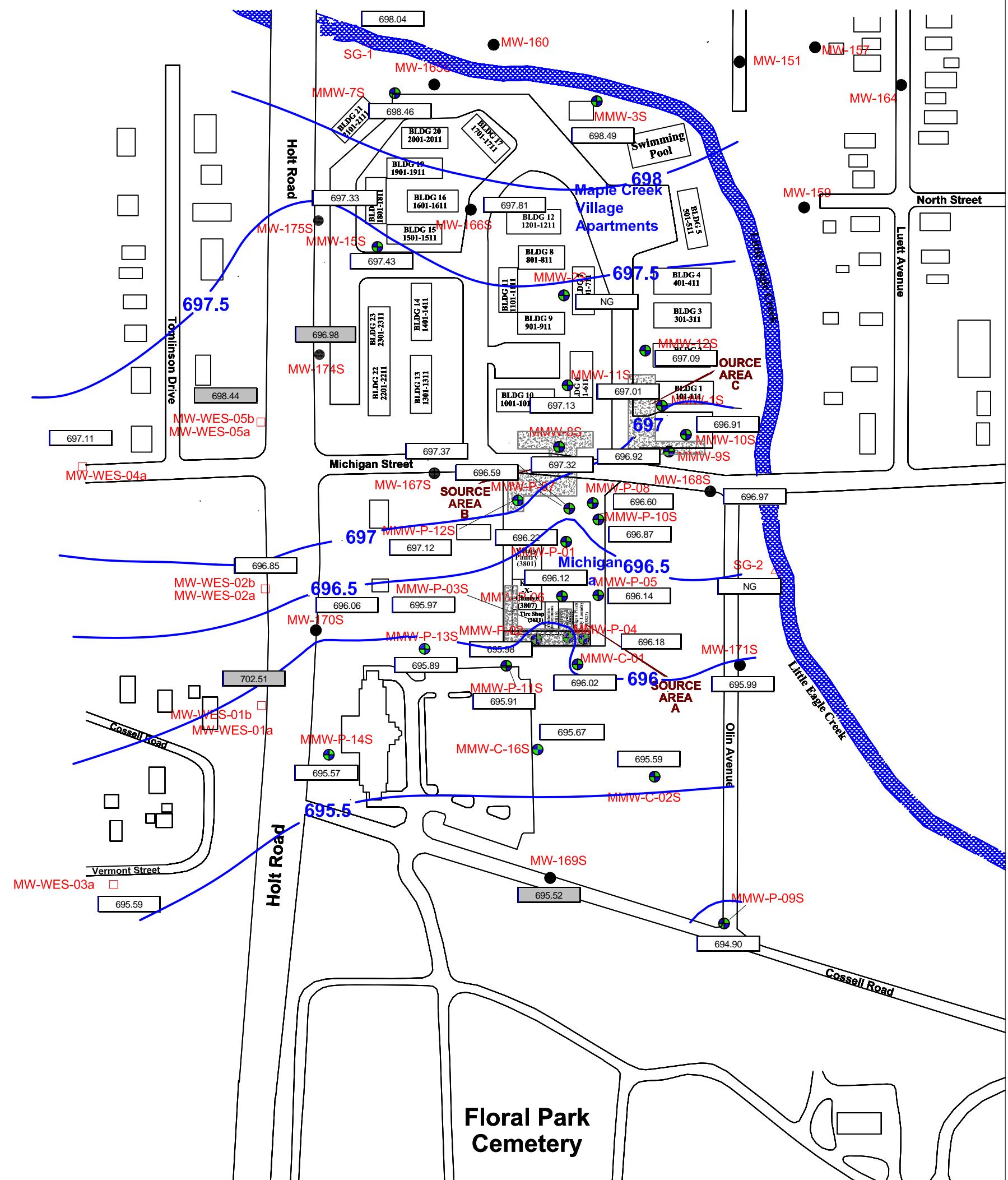
**Scale:**  
1" = 200'

## SITE PLAN

**Michigan Plaza**  
**3801 - 3823 West Michigan Street**  
**Indianapolis, INDIANA**

# FIGURE

## 1



## LEGEND

MMW-P-06  MUNDELL Monitoring Well

NG = Not Gauged

MW-160 ● ENVIRON Monitoring Well

### Static water elevation (ft-MSL)

MW-WES-Q1A U.S. EPA Monitoring Well

Static water elevation not used to contour potentiometric surface map.

1

## SG-1 Stream Gauge Location

contour poten  
map

Potentiometric Surface  
Equipotential Lines Contour  
Interval = 0.5 feet

1

# Project

M01048

4Q12 QM

Date Pr  
1-17-13

**Scale:**  
1" = 200'

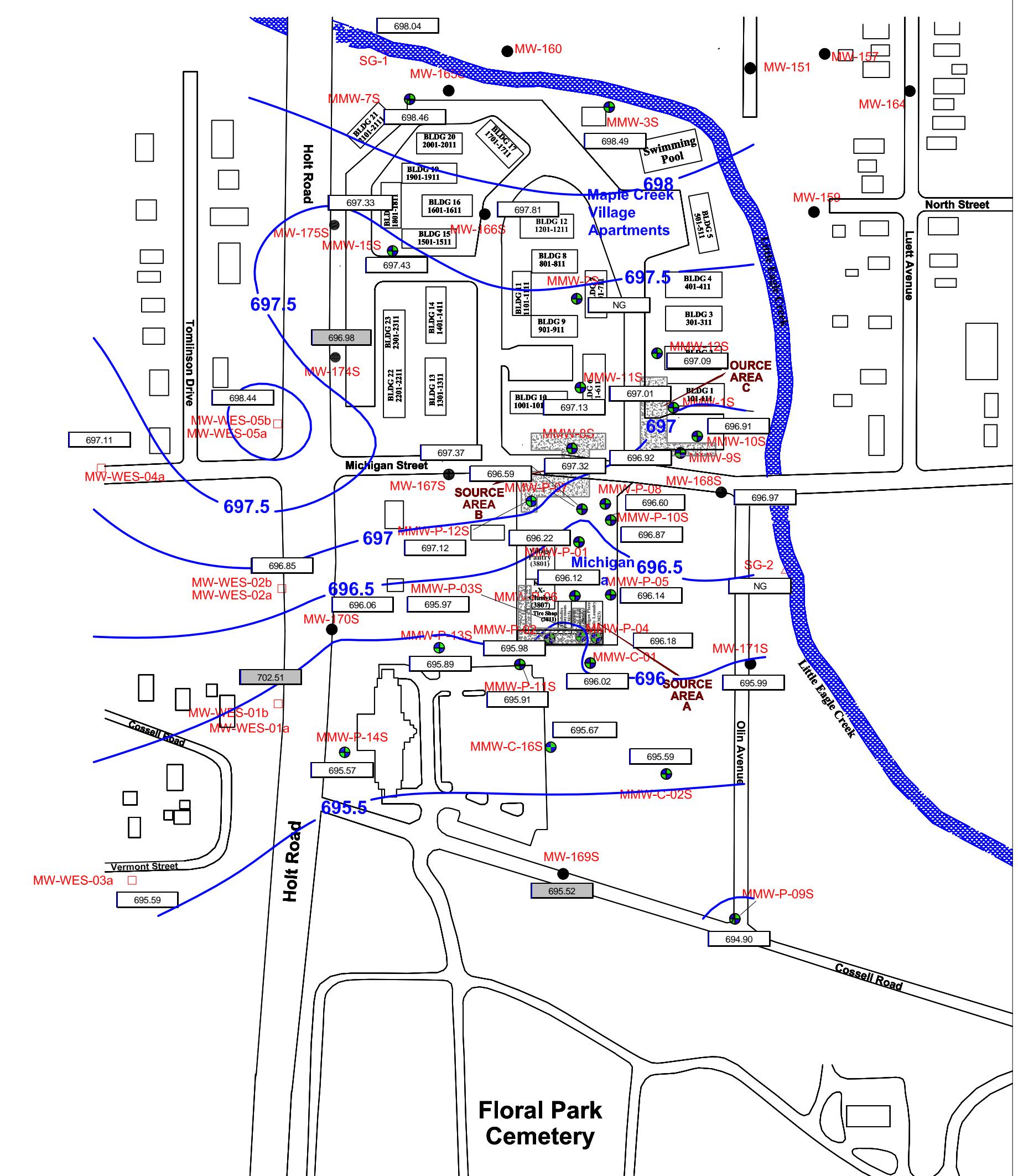
1=200

# **SHALLOW POTENTIOMETRIC SURFACE - 4TH QUARTER 2012**

**Michigan Plaza**  
**3801 - 3823 West Michigan Street**  
**Indianapolis, INDIANA**

# **FIGURE 2a**





### LEGEND

- MMW-P-06    MUNDELL Monitoring Well
- MW-160    ENVIRON Monitoring Well
- MW-WES-01A    U.S. EPA Monitoring Well
- SG-1    Stream Gauge Location
- Potentiometric Surface  
Equipotential Lines Contour  
Interval = 0.5 feet

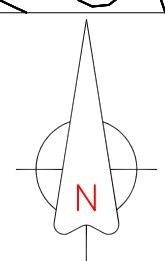
NG = Not Gauged

696.68

Static water elevation (ft-MSL)

695.64

Static water elevation not used to  
contour potentiometric surface  
map.



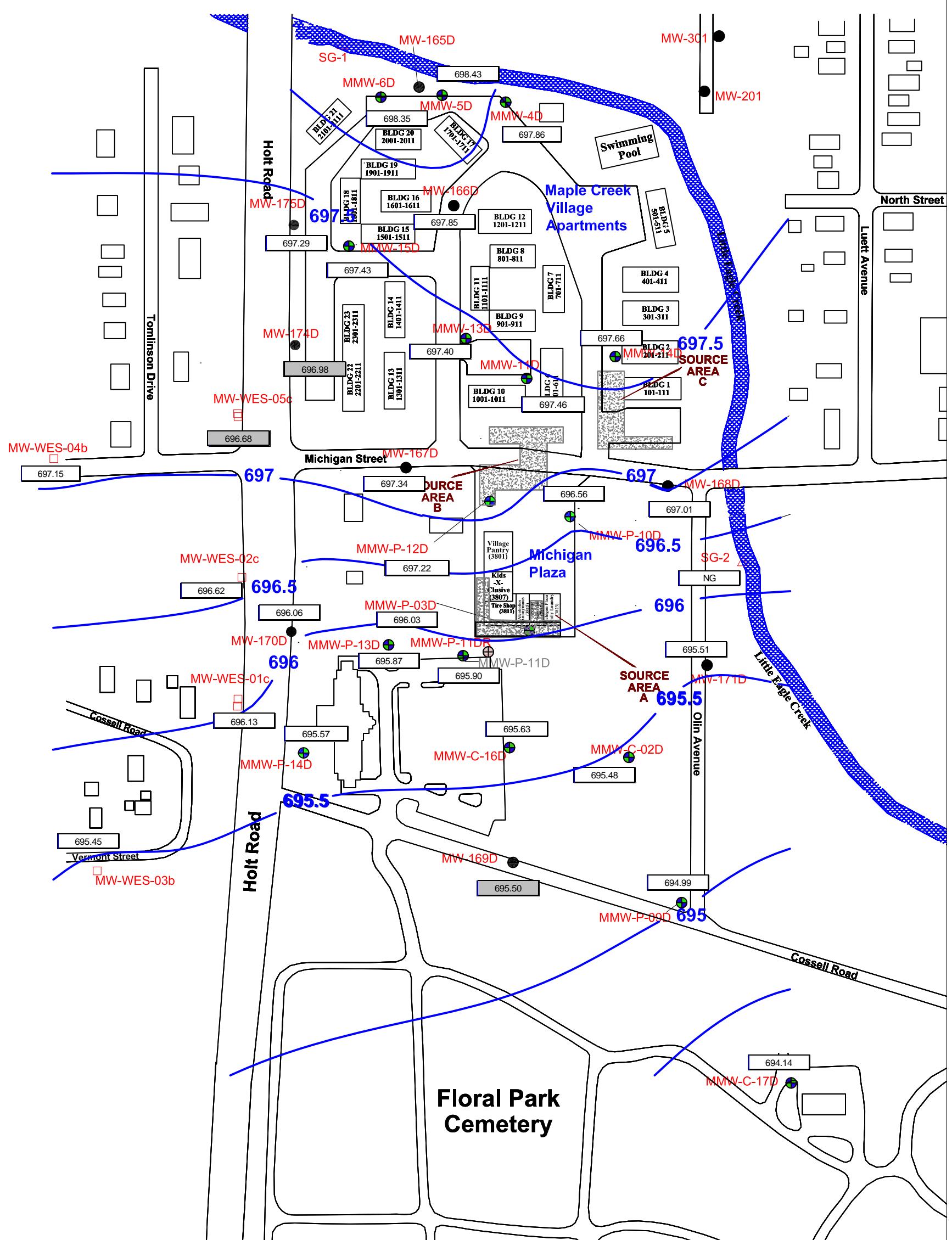
0    SCALE    200

feet  
ENVIRON/Keramida Monitoring  
Well Locations Referenced from  
Keramida Environmental, Inc.  
Project No. 2829  
March 13, 2002

Project Number:	M01046
Drawing File:	4Q12 QMR
Date Prepared:	1-17-13
Scale:	1"=200'

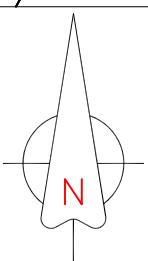
SHALLOW POTENTIOMETRIC SURFACE -  
4TH QUARTER 2012  
Michigan Plaza  
3801 - 3823 West Michigan Street  
Indianapolis, INDIANA

FIGURE  
**2b**



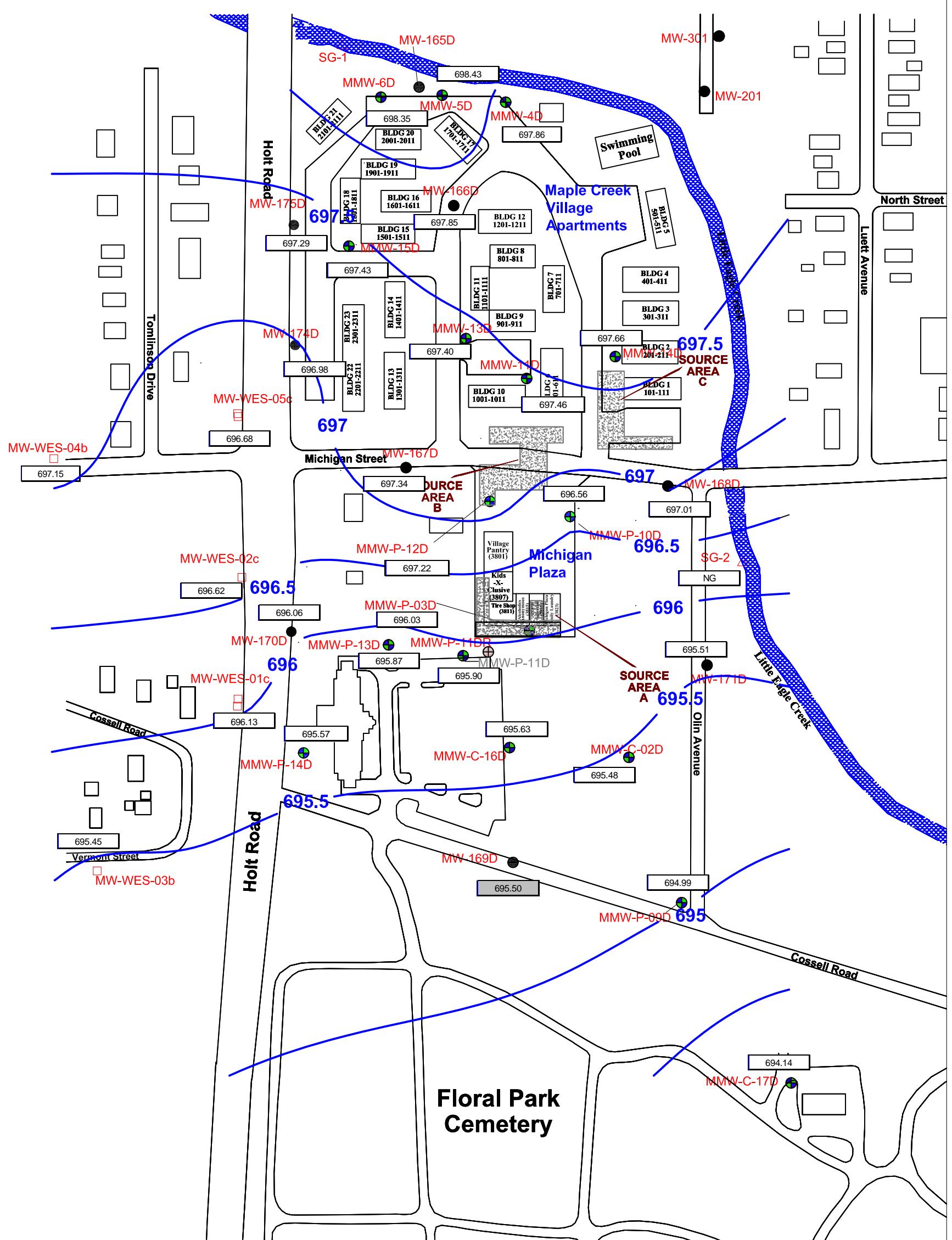
## LEGEND

- MMW-P-06 ● MUNDELL Monitoring Well      696.68      Static water elevation (ft-MSL)
- MW-160 ● ENVIRON Monitoring Well      695.64      Static water elevation not used to contour potentiometric surface map.
- MW-WES-01A □ U.S. EPA Monitoring Well
- 697.5** Potentiometric Surface  
Equipotential Lines Contour  
Interval = 0.5 feet



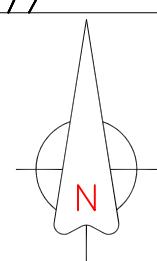
0 SCALE 200  
feet

ENVIRON/Keramida Monitoring  
Well Locations Referenced from  
Keramida Environmental, Inc.  
Project No. 2829  
March 13, 2002



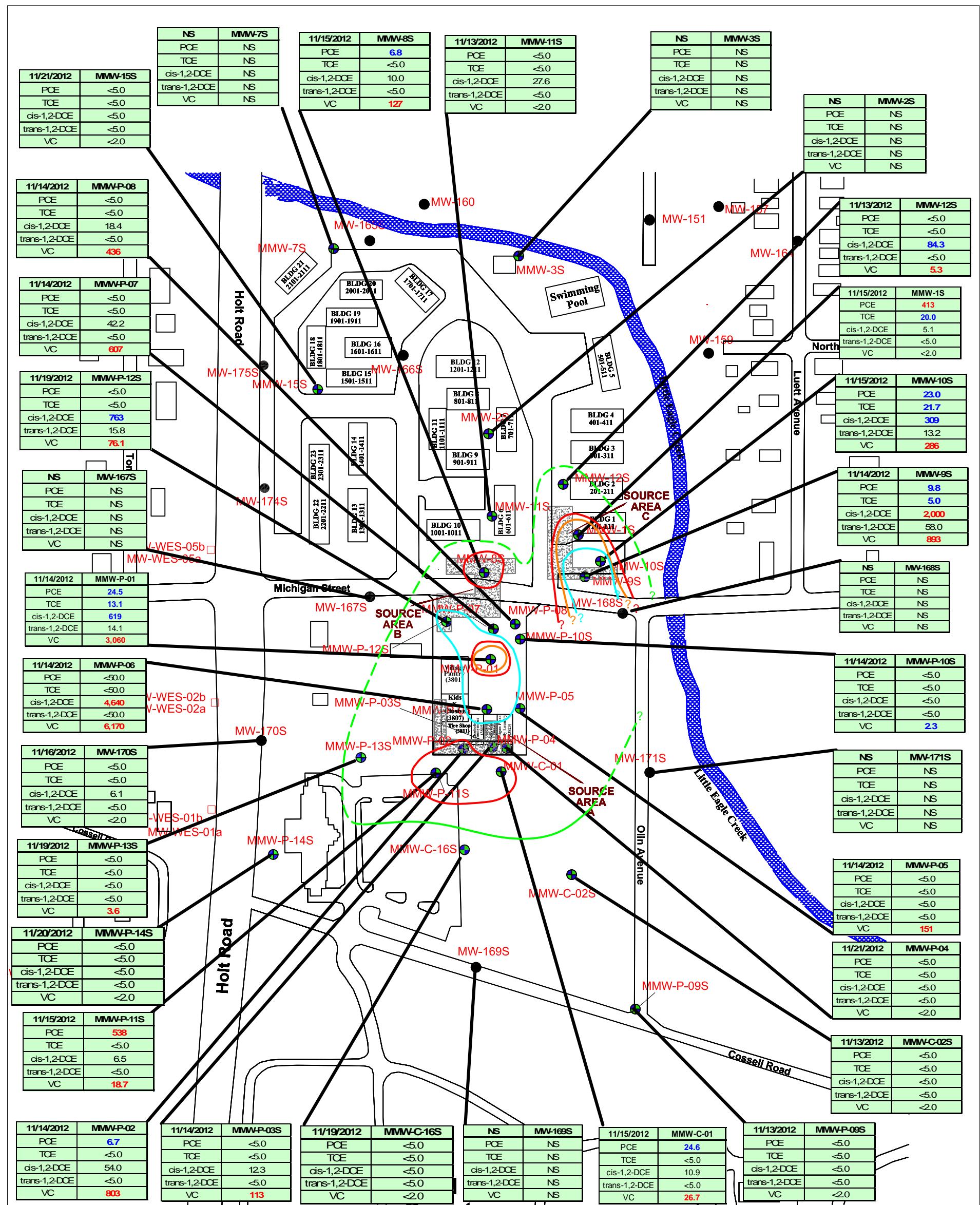
## LEGEND

- MMW-P-06 ● MUNDELL Monitoring Well      696.68 Static water elevation (ft-MSL)
- MW-160 ● ENVIRON Monitoring Well      695.64 Static water elevation not used to contour potentiometric surface map.
- MW-WES-01A □ U.S. EPA Monitoring Well
- 697.5** Potentiometric Surface Equipotential Lines Contour Interval = 0.5 feet



0 SCALE 200  
feet

ENVIRON/Keramida Monitoring Well Locations Referenced from Keramida Environmental, Inc.  
Project No. 2829  
March 13, 2002



| FGND

MMW-P-06  MUNDELL Monitoring Wel

MW-160 ● ENVIRON Monitoring Well

MW-WES-01A  U.S. EPA Monitoring Well

### Inferred Extent of PCE > 5 ug/L

#### Inferred Extent of TCE > 5 ug/L

> 70 µg/L

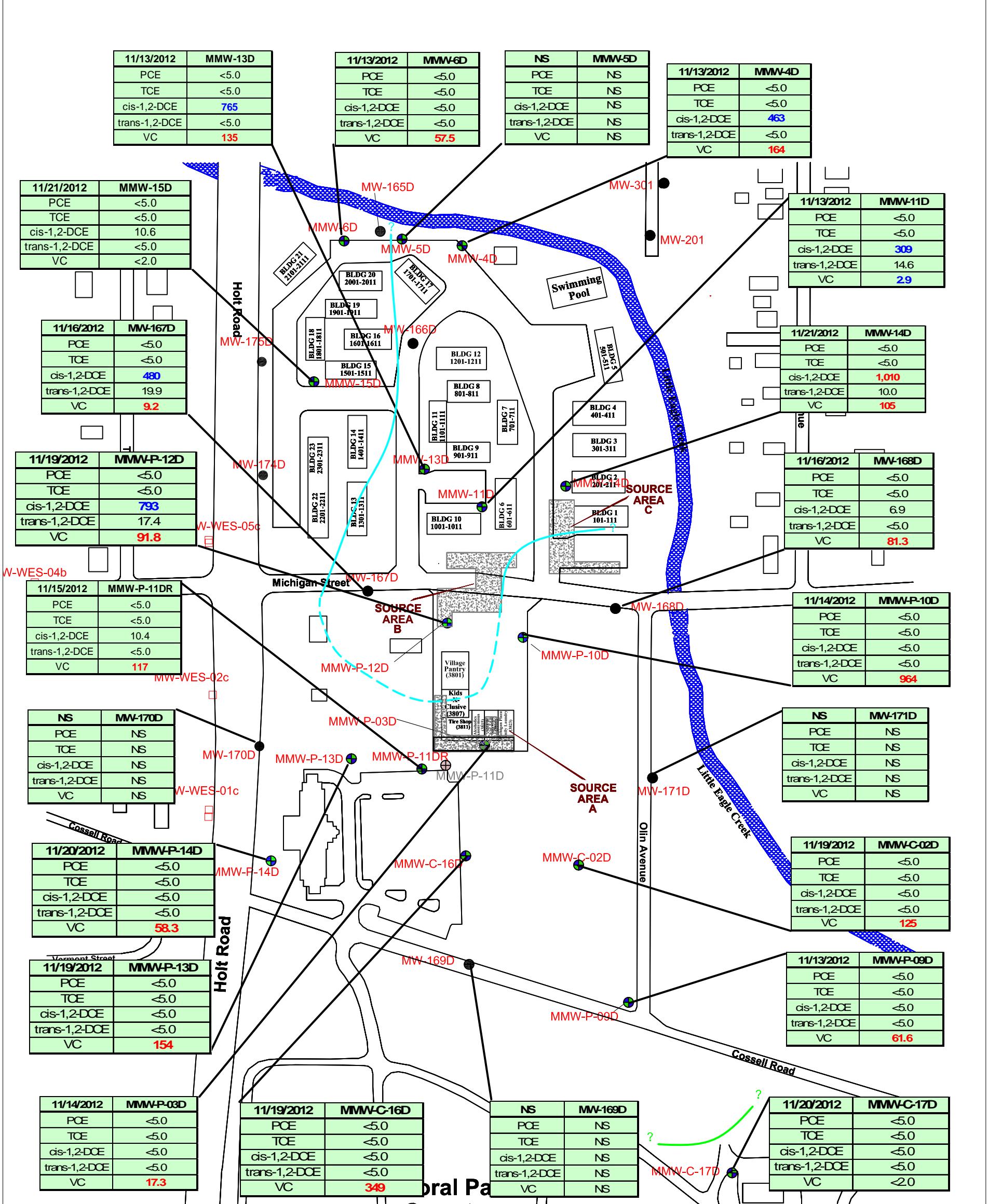
Inferred Extent of VC > 2 ug/L

	PCE	TCE	cis-1,2-DCE	trans-1,2-DCE	Vinyl chloride
	ug/l				
<b>IDEM RISC Default Industrial Cleanup Level</b>	<b>55</b>	<b>31</b>	<b>1,000</b>	<b>2,000</b>	<b>4</b>
<b>IDEM RISC Default Residential Cleanup Level; IDEM 2012 RCG Tap Residential</b>	<b>5</b>	<b>5</b>	<b>70</b>	<b>100</b>	<b>2</b>

All Values Over IDEM RISC Industrial Default Cleanup Levels In ug/l  
 All Values Over IDEM RISC Residential Default Cleanup Levels/2  
 PCE = Tetrachloroethene  
 TCE = Trichloroethene  
 cis-1,2-DCE = cis-1,2-Dichloroethene  
 trans-1,2-DCE = trans-1,2-Dichloroethene  
 ug/l = micrograms per liter  
 NS = Not Sampled



*110 South Downey Avenue  
Indianapolis, Indiana 46219  
317-630-9060, fax 317-630-9065  
[www.MaynardAssociates.com](http://www.MaynardAssociates.com)*



MMW-P-09D ● MUNDELL Monitoring Well

MW-169D ● ENVIRON Monitoring Well

MW-WES-05C □ U.S. EPA Monitoring Well

Inferred Extent of PCE > 5 ug/L

Inferred Extent of TCE > 5 ug/L

Inferred Extent of Cis-1,2 - DCE > 70 ug/L

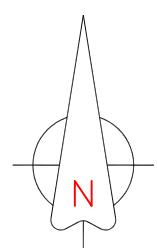
Inferred Extent of VC > 2 ug/L

### LEGEND

	PCE	TCE	cis-1,2-DCE	trans-1,2-DCE	Vinyl chloride
ug/l					
IDEML RISC Default Industrial Cleanup Level	55	31	1,000	2,000	4
IDEML RISC Default Residential Cleanup Level; IDEM 2012 RCG Tap Residential	5	5	70	100	2
4/25/2012 MMW-1S					
PCE	270				
TCE	11.2				
cis-1,2-DCE	34.2				
trans-1,2-DCE	<5.0				
VC	39				

All Values Over IDEML RISC Industrial Default Cleanup Levels In Red  
All Values Over IDEML RISC Residential Default Cleanup Levels/2012 RCG Tap - Residential Screening Level In Blue  
PCE = Tetrachloroethene  
TCE = Trichloroethene  
cis-1,2-DCE = cis-1,2-Dichloroethene  
trans-1,2-DCE = trans-1,2-Dichloroethene  
ug/l = micrograms per liter  
NS = Not Sampled  
All analytical results presented in micrograms per liter (ug/l)

NS = Not Sampled



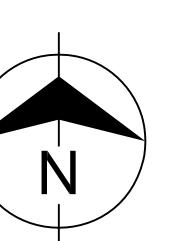
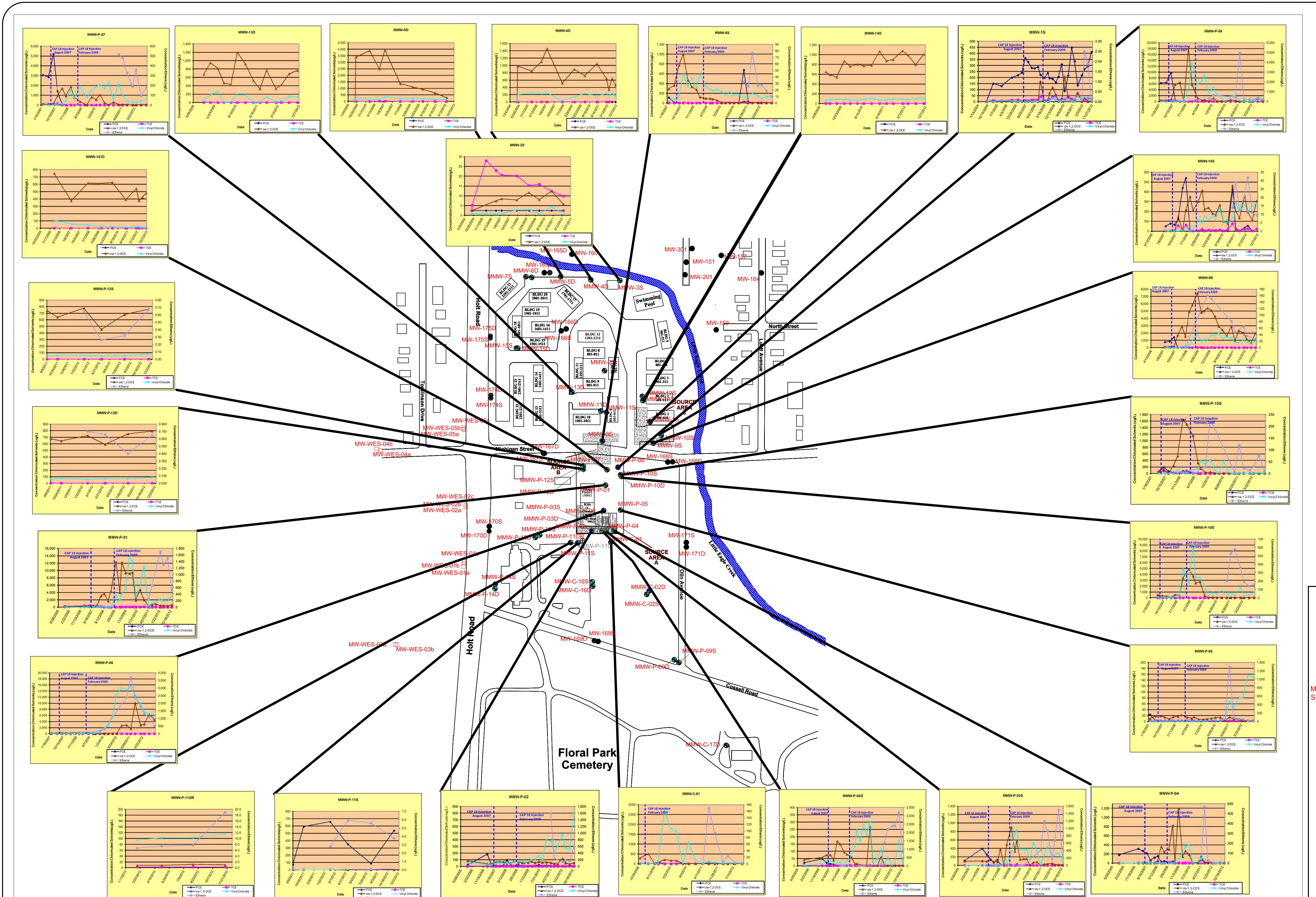
0 SCALE 200 feet

Project Number:  
M01046  
Drawing File:  
4Q12 QMR  
Date Prepared:  
1-11-13  
Scale:  
1"=200'

### GROUNDWATER ANALYTICAL MAP - DEEP 4TH QUARTER 2012

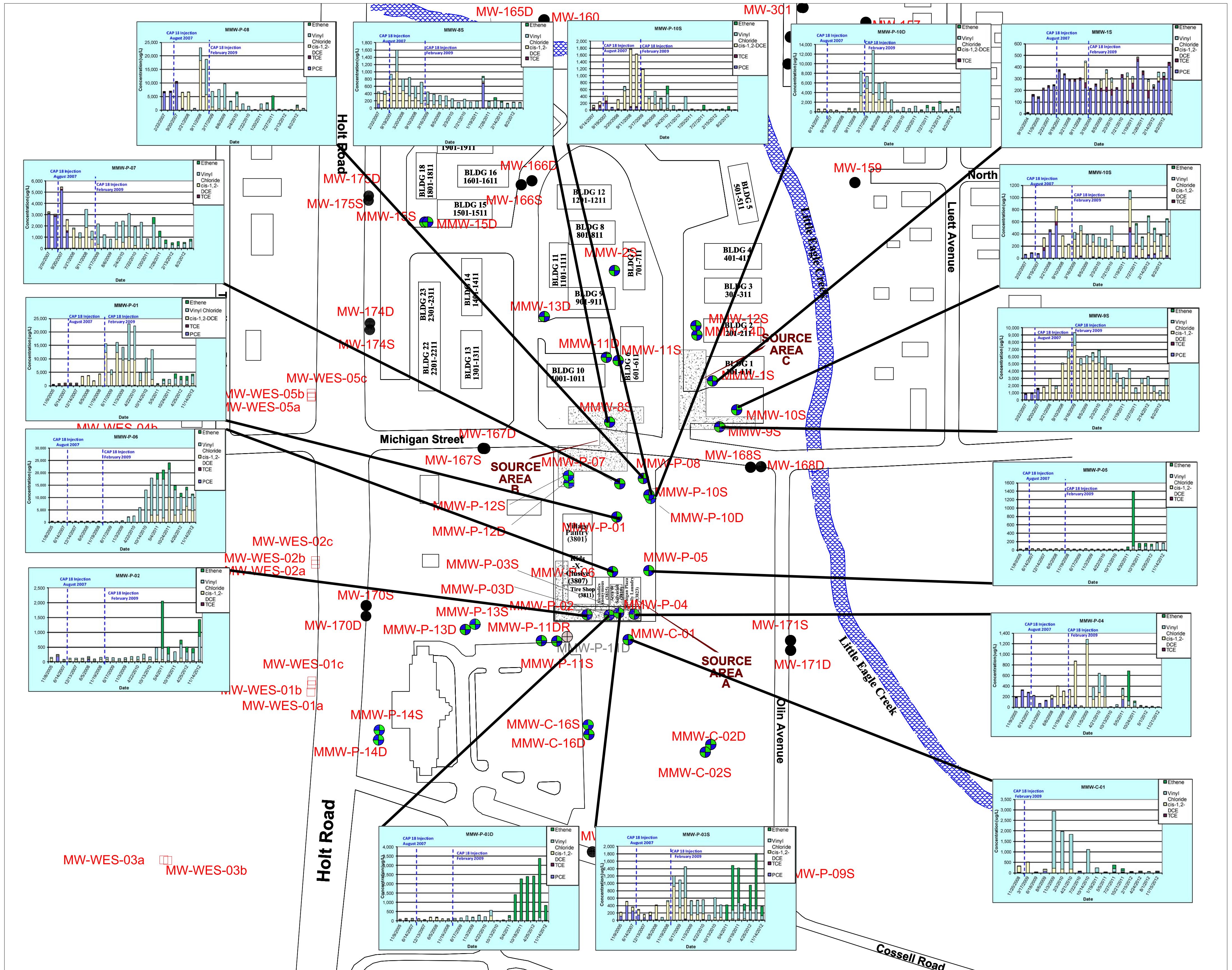
Michigan Plaza  
3801 - 3823 West Michigan Street  
Indianapolis, INDIANA

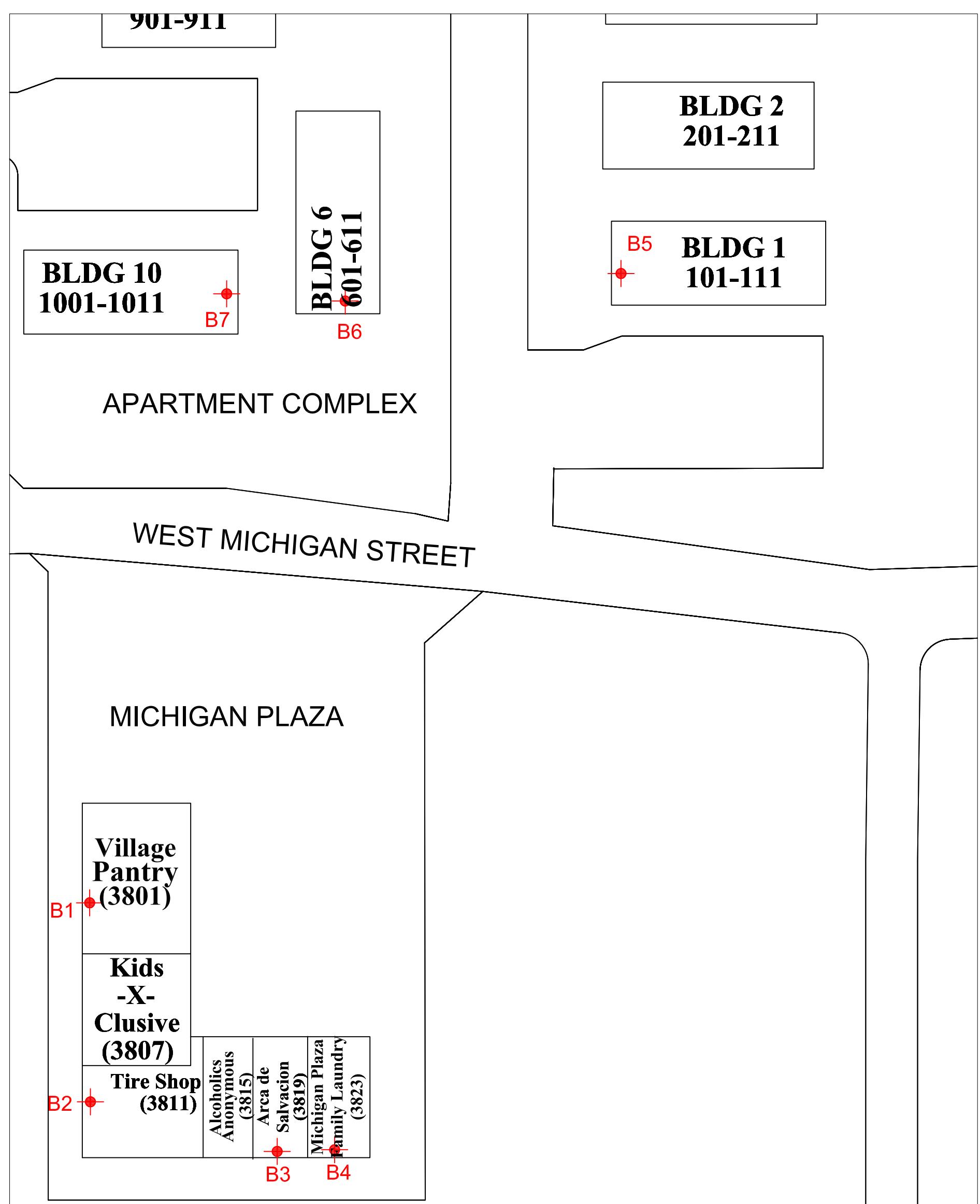
FIGURE  
5



A scale bar indicating distances of 0, 200', and 400'. Below it, the text "SCALE IN FEET" is printed.

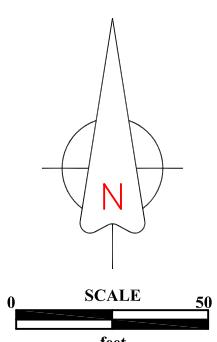
1



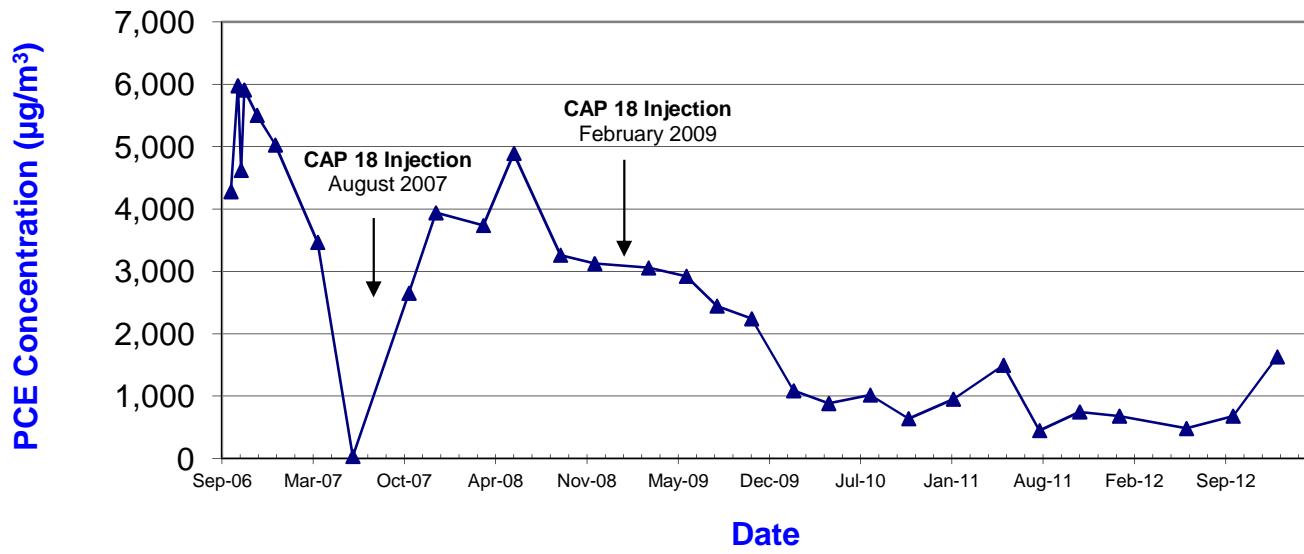


### LEGEND

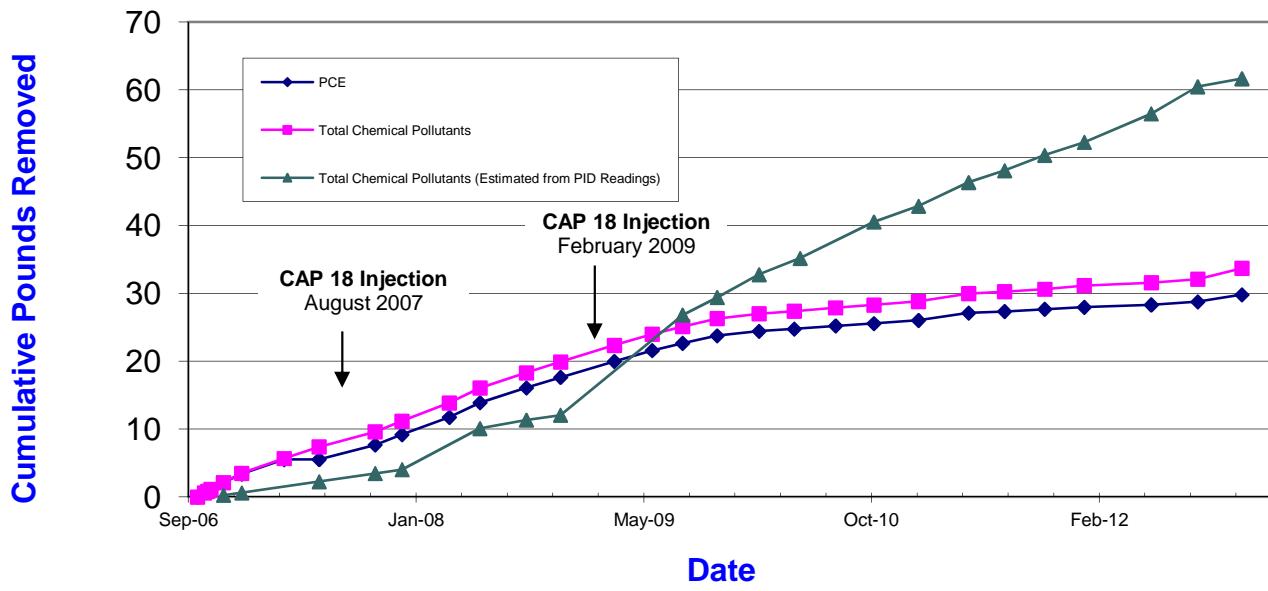
B1 • System Location



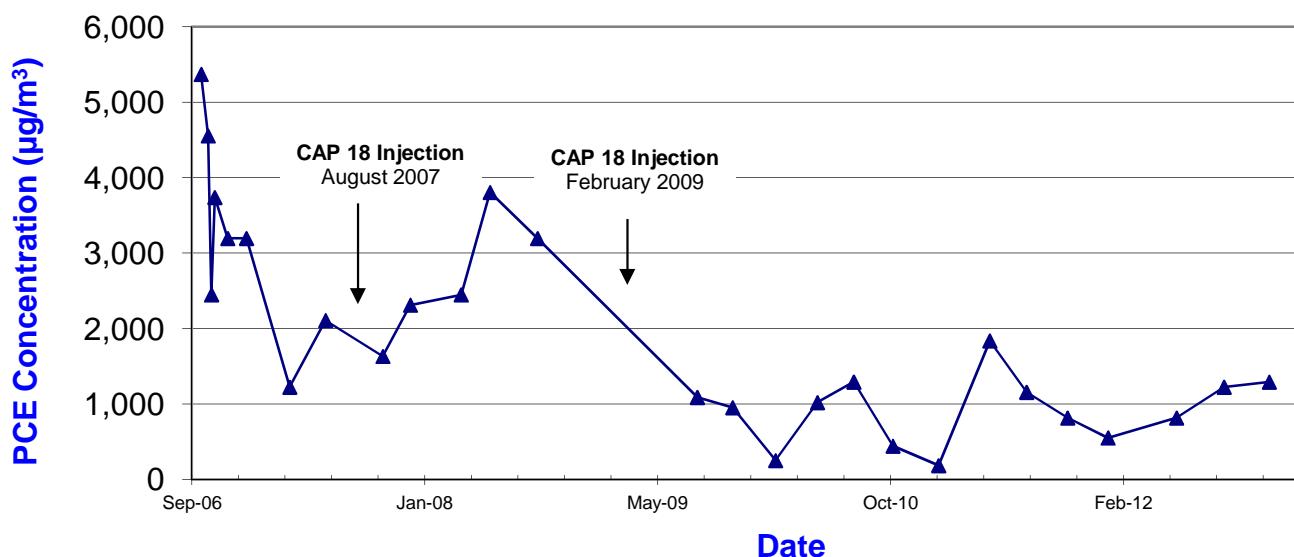
**PCE Vapor Concentrations Trend -  
Village Pantry (Unit 3801) Vapor Mitigation System (B1)**



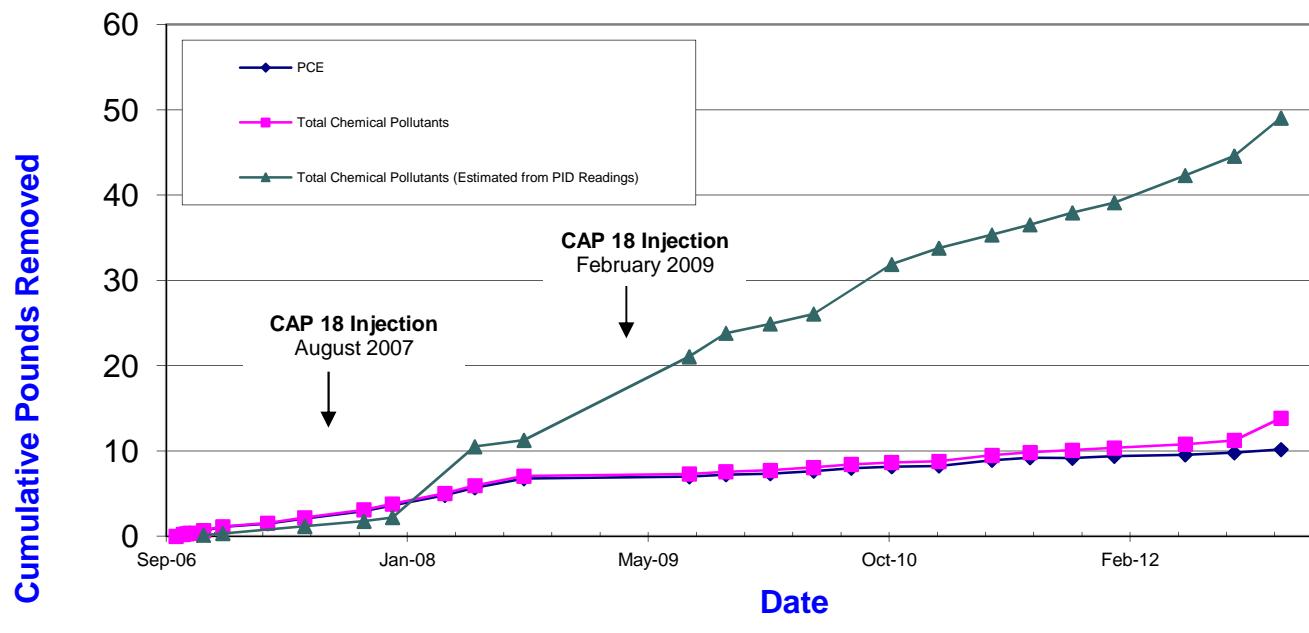
**Chemical Pounds Removed -  
Village Pantry (Unit 3801) Vapor Mitigation System (B1)**

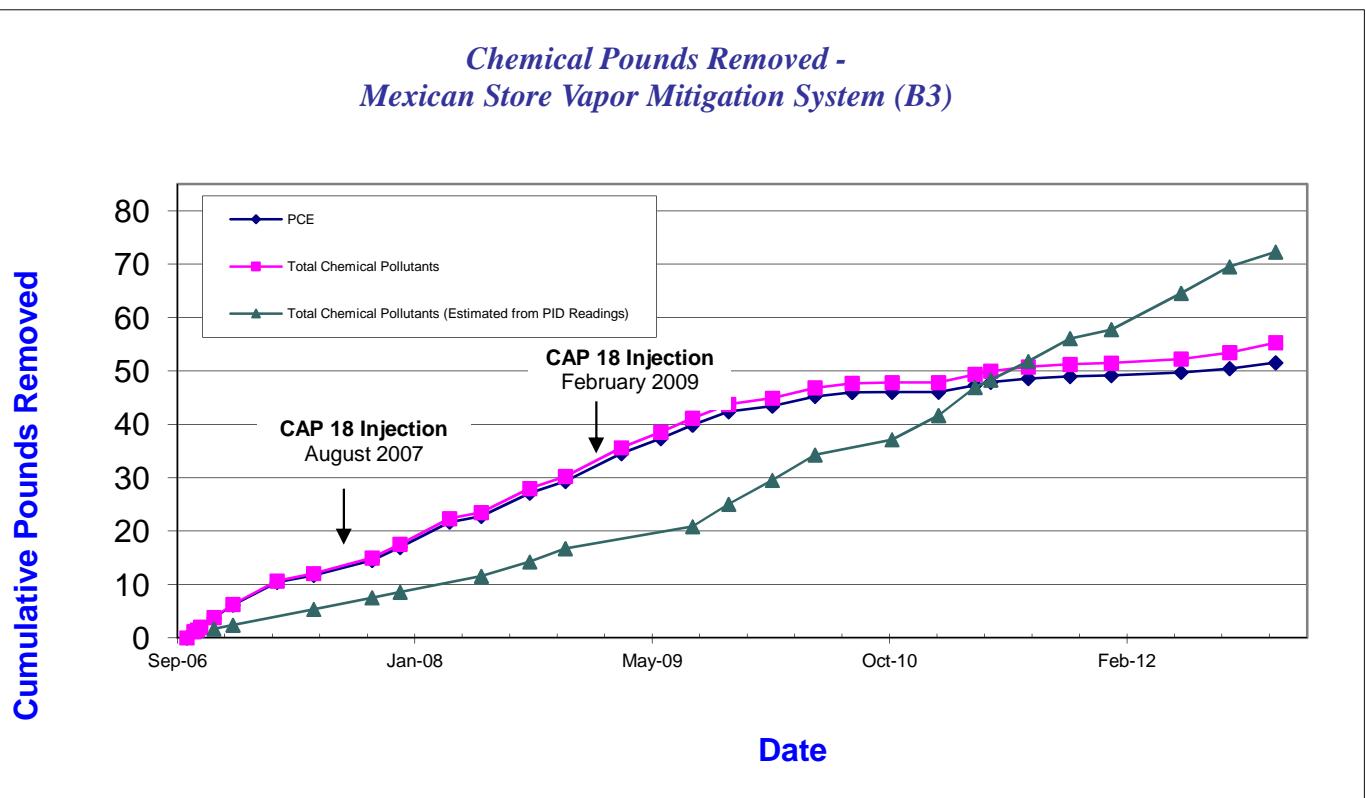
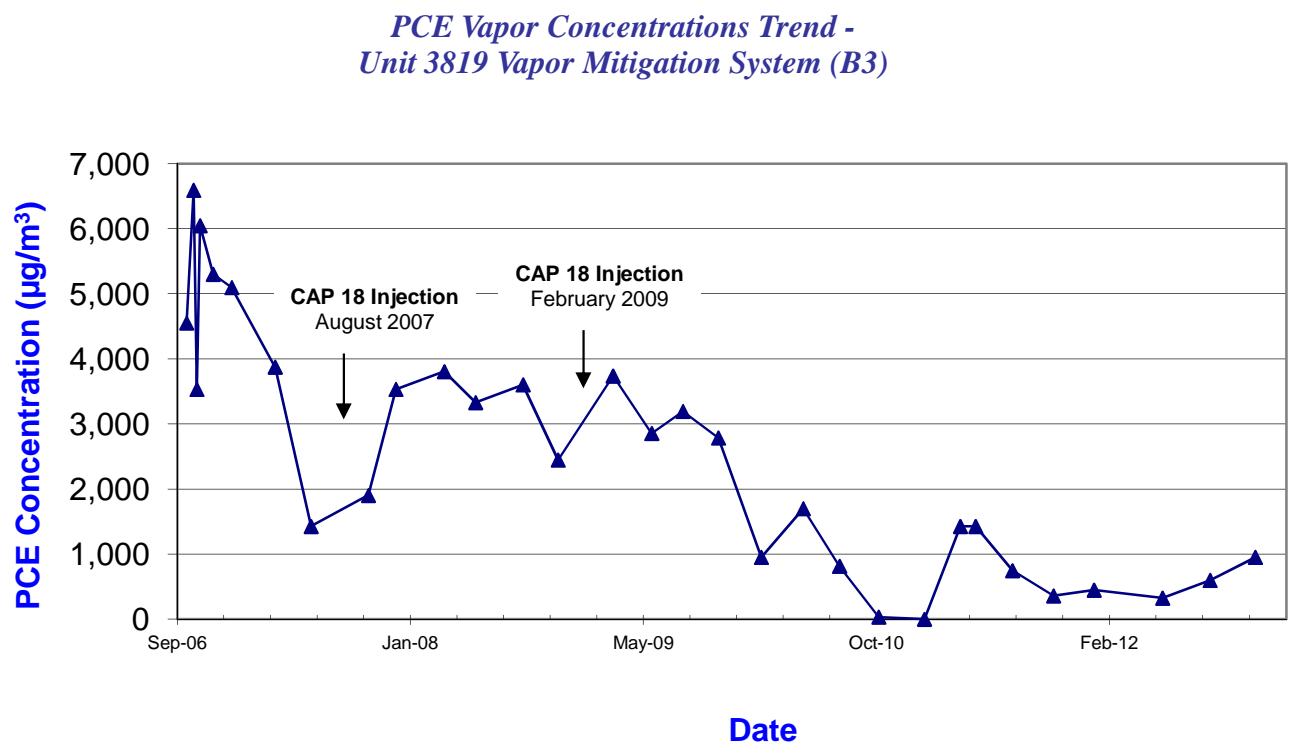


**PCE Vapor Concentrations Trend -  
Unit 3811 Vapor Mitigation System (B2)**



**Chemical Pounds Removed -  
Unit 3811 Vapor Mitigation System (B2)**





*Mundell & Associates, Inc.*  
110 South Downey Avenue  
Indianapolis, Indiana 46219  
[www.MundellAssociates.com](http://www.MundellAssociates.com)

**Project Number:**  
M01046

**File:**  
MI Plaza charts

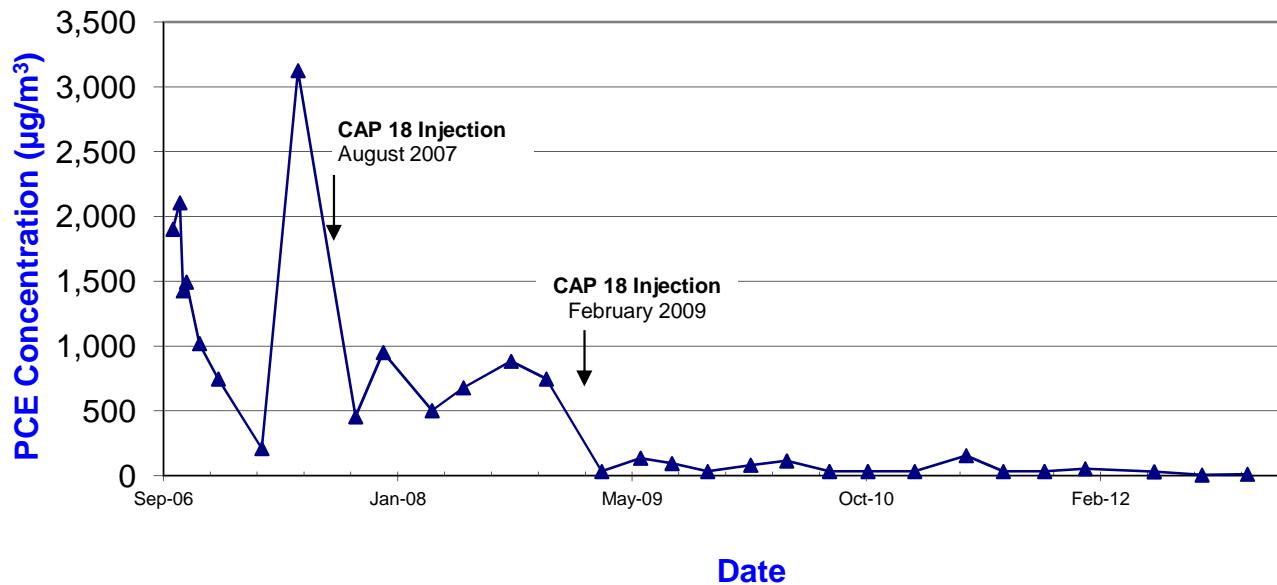
**Date Prepared:**  
1/15/2013

**Scale:**  
no scale

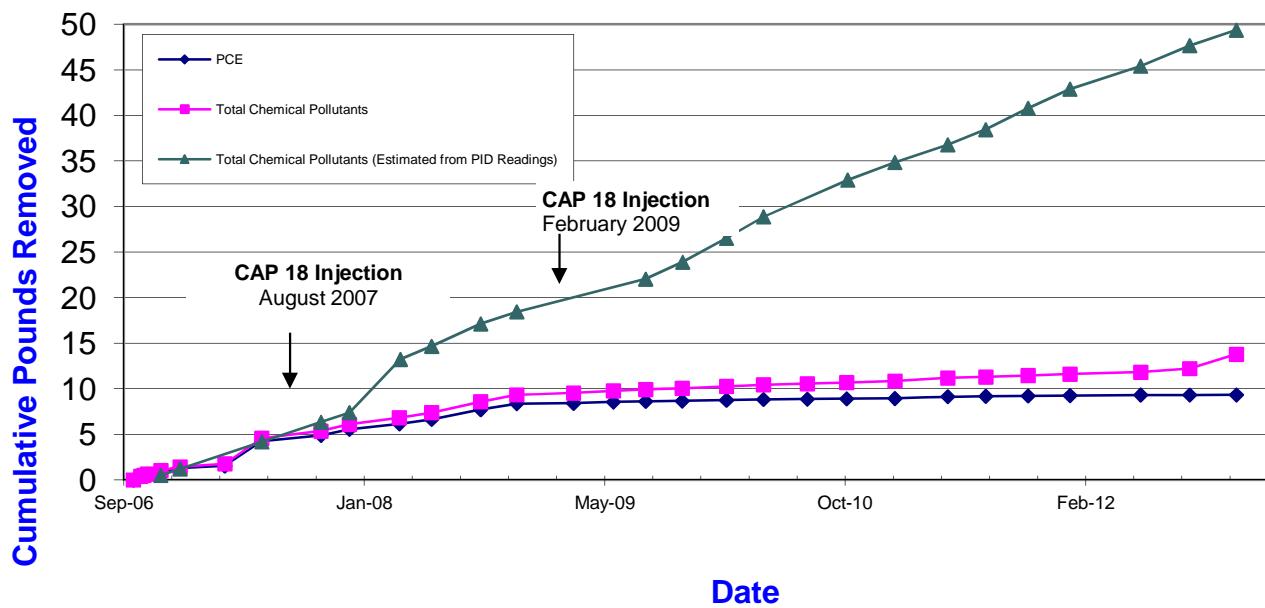
PCE Concentration Trends  
and Cumulative Pounds Removed  
Vapor Mitigation System B-3 (Unit 3819)  
Fourth Quarter 2012  
Michigan Plaza  
3801-3823 West Michigan Street  
Indiansapolis, IN

# FIGURE 11

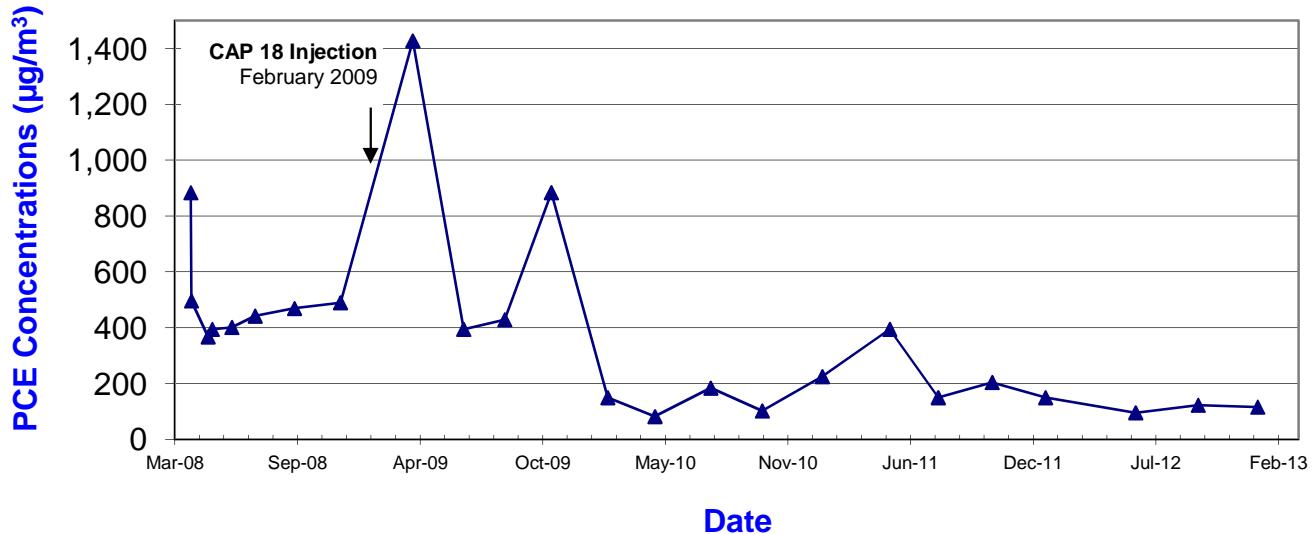
**PCE Vapor Concentrations Trend -  
Laundromat Vapor Mitigation System (B4)**



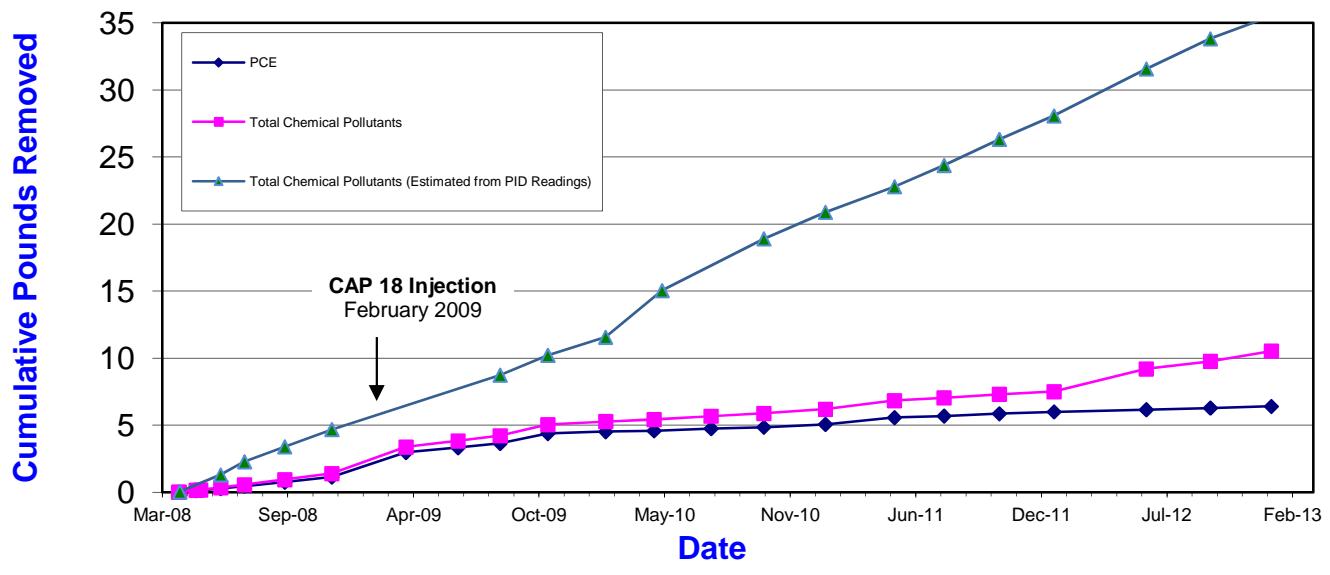
**Chemical Pounds Removed -  
Laundromat Vapor Mitigation System (B4)**



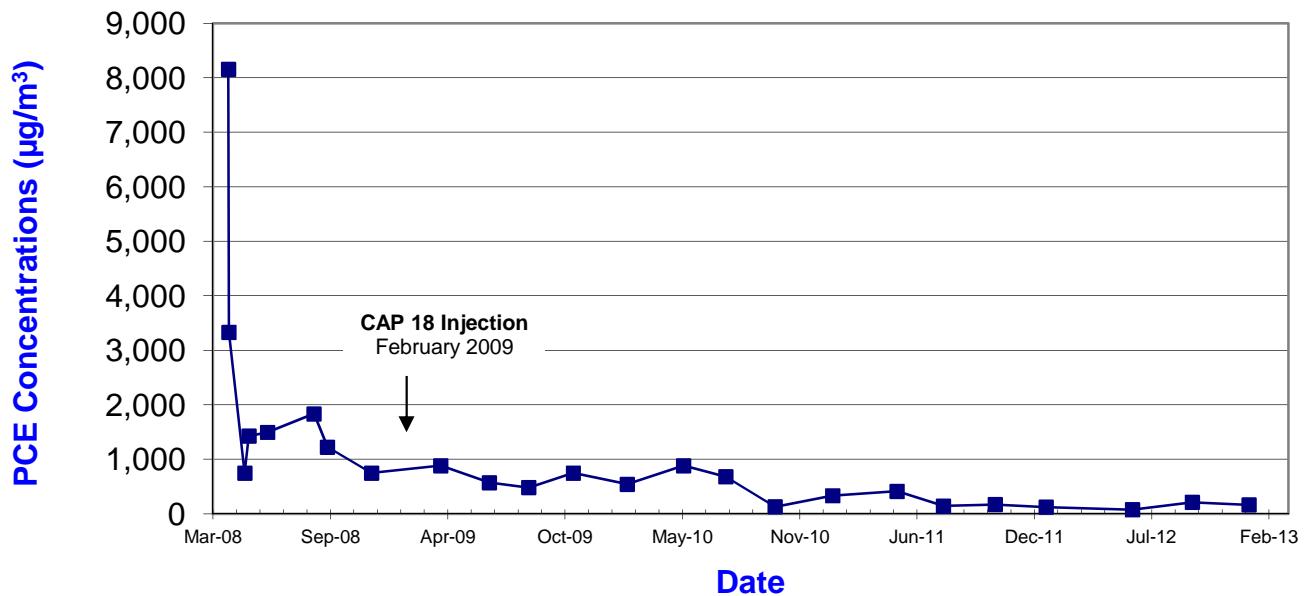
**PCE Vapor Concentrations Trend -  
Apartment Building 1 Vapor Mitigation System (B5)**



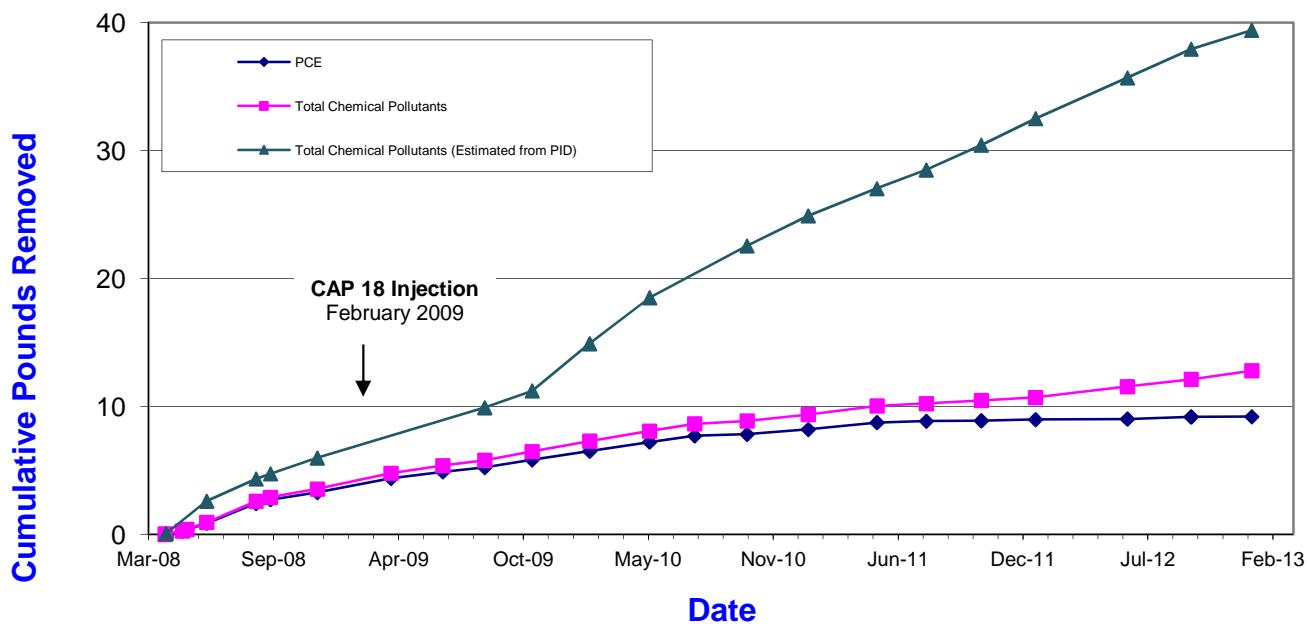
**Chemical Pounds Removed -  
Apartment Building 1 Vapor Mitigation System (B5)**



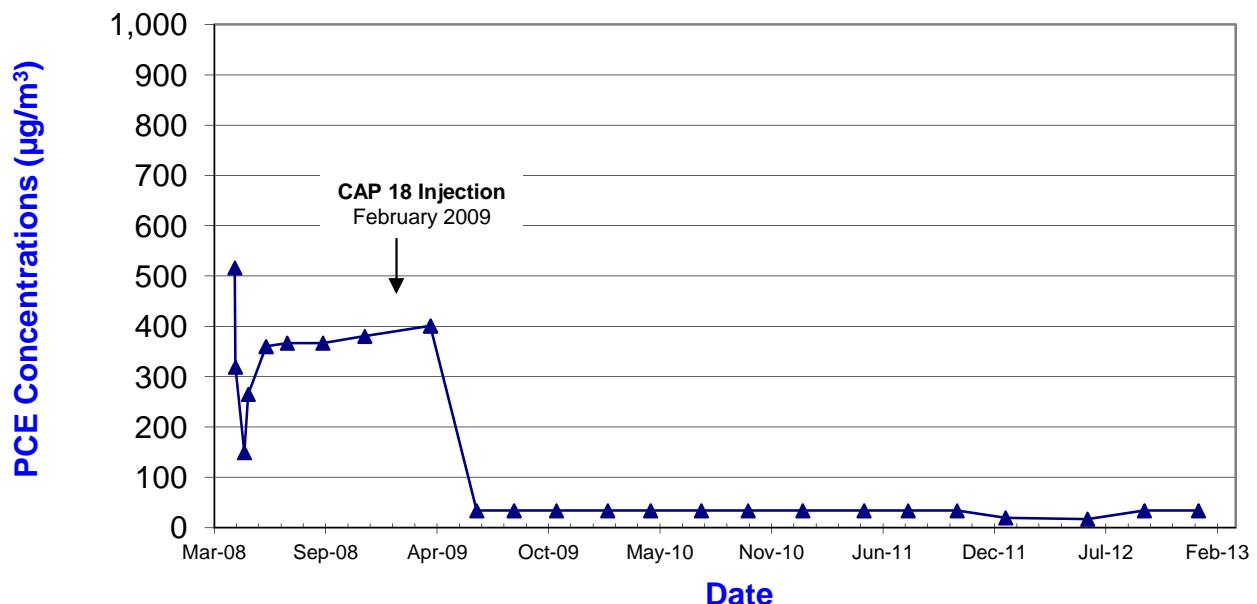
**PCE Vapor Concentrations Trend -  
Apartment Building 6 Vapor Mitigation System (B6)**



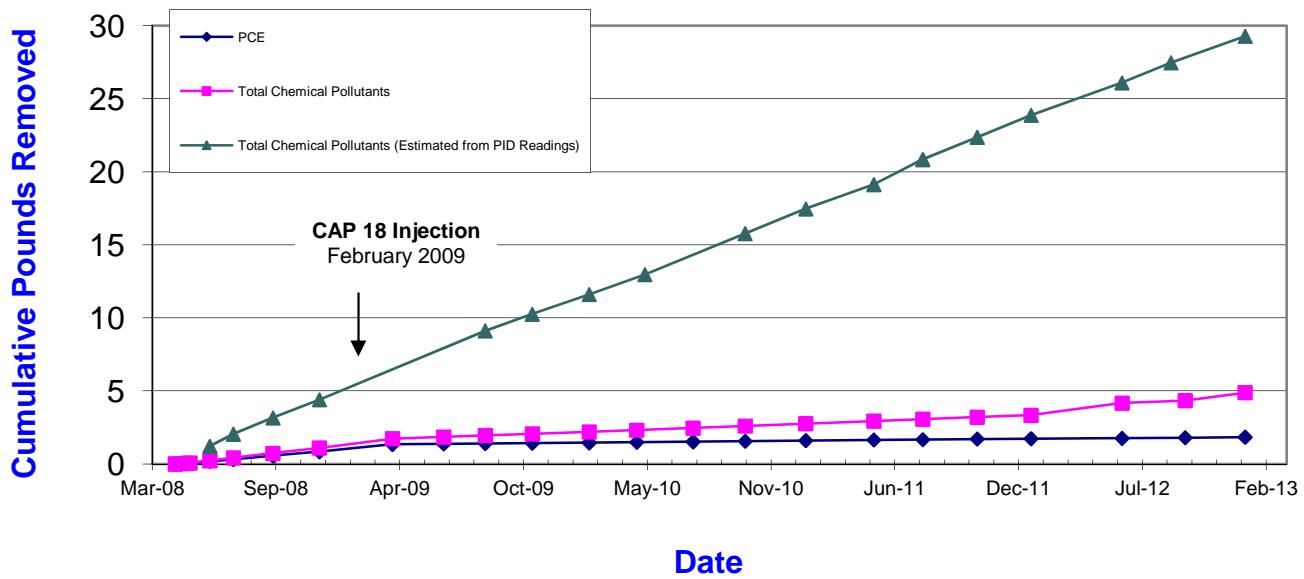
**Chemical Pounds Removed -  
Apartment Building 6 Vapor Mitigation System (B6)**



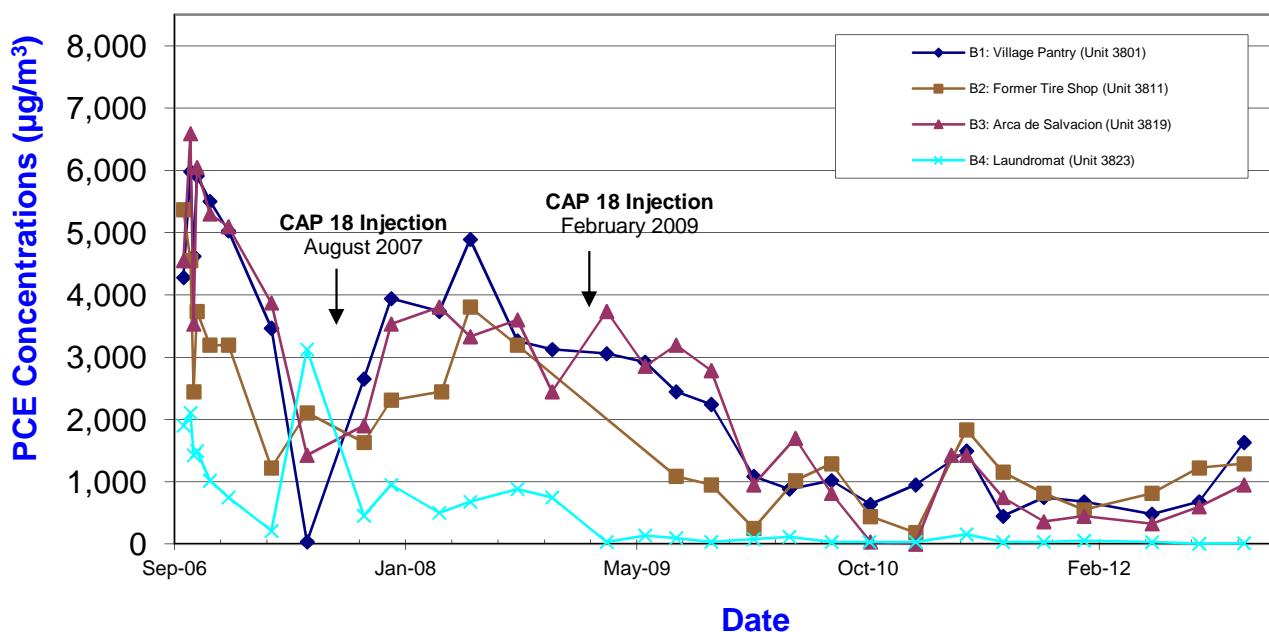
**PCE Vapor Concentrations Trend -  
Apartment Building 10 Vapor Mitigation System (B7)**



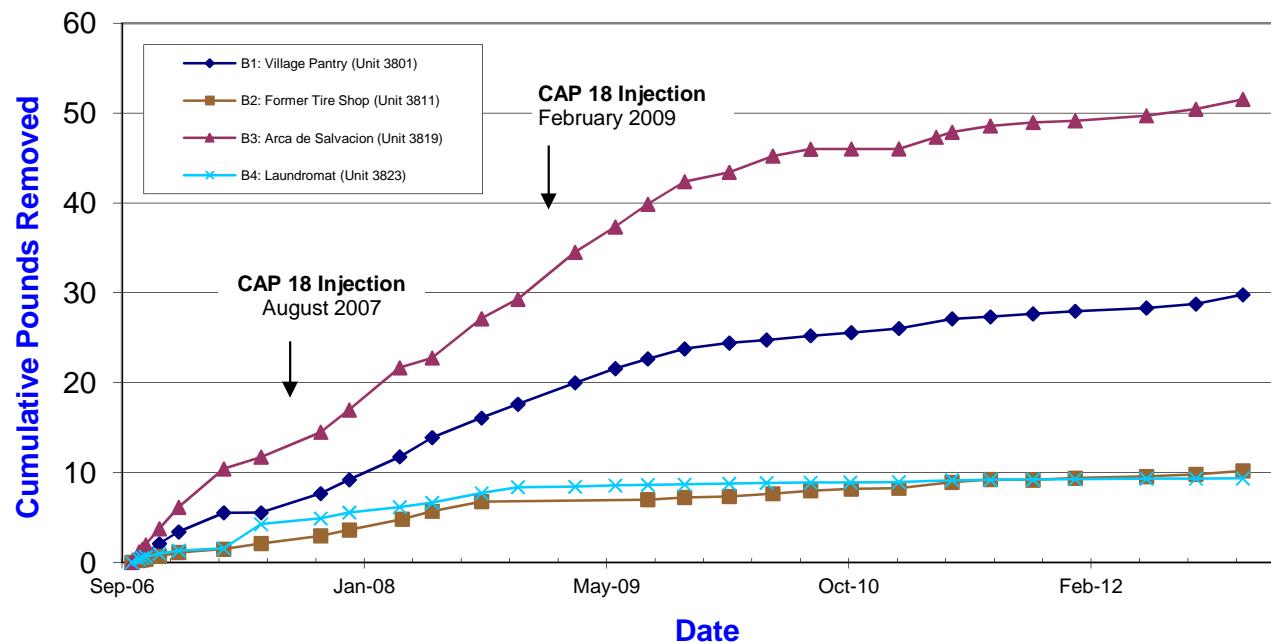
**Chemical Pounds Removed -  
Apartment Building 10 Vapor Mitigation System (B7)**



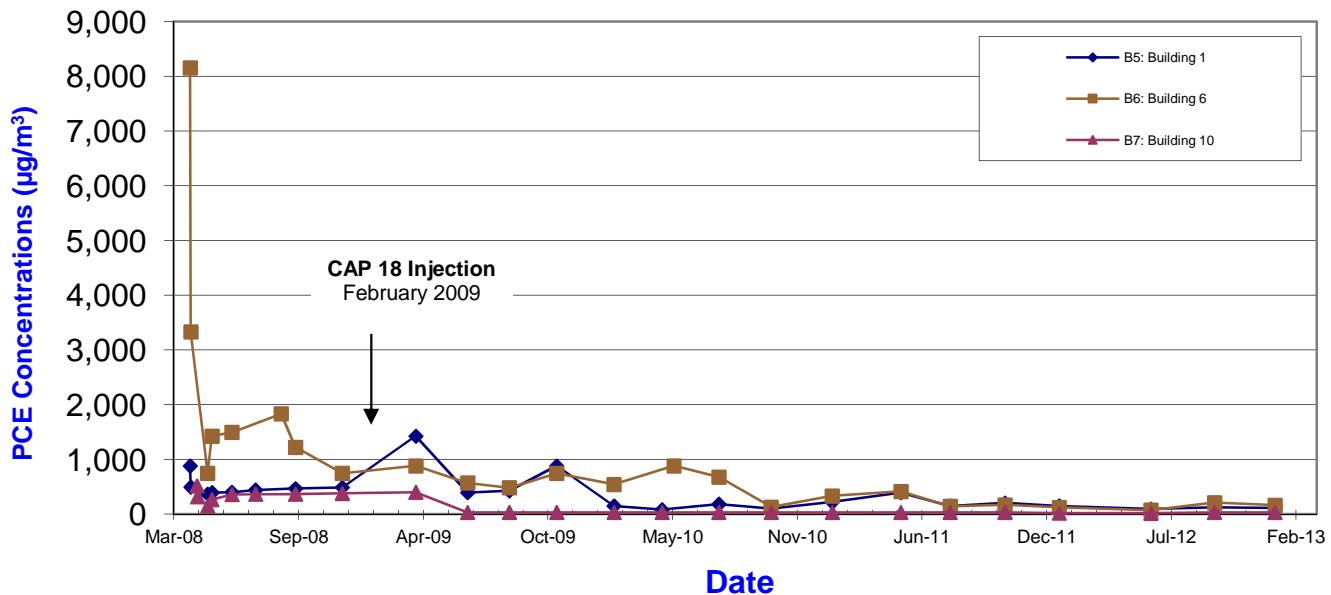
**PCE Concentrations Trend -  
Plaza Vapor Mitigation Systems (B1-B4)**



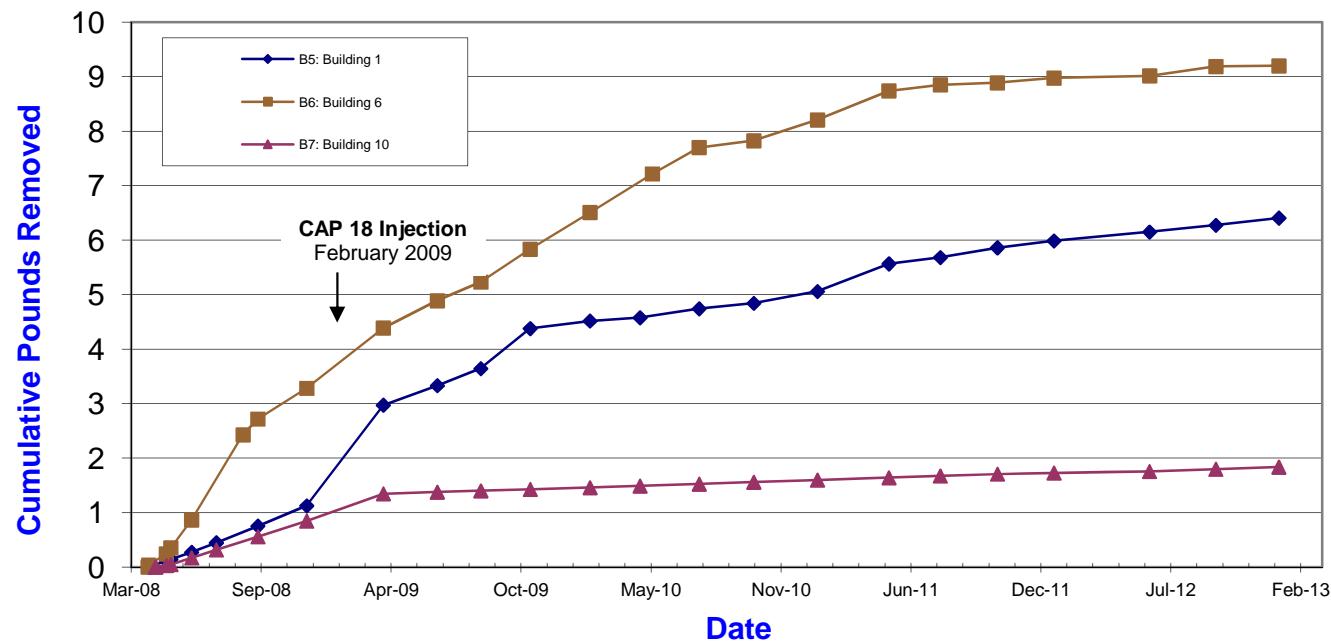
**PCE Pounds Removed -  
Plaza Vapor Mitigation Systems (B1-B4)**



**PCE Concentrations Trend -  
Apartment Vapor Mitigation Systems (B5-B7)**



**PCE Pounds Removed -  
Apartment Vapor Mitigation Systems (B5-B7)**



## **APPENDIX A**

### Laboratory Certificates of Analysis

December 03, 2012

Mr. Mark Breting  
Mundell & Associates  
110 S. Downey Ave.  
Indianapolis, IN 46228

RE: Project: MI Plaza M01046  
Pace Project No.: 5072339

Dear Mr. Breting:

Enclosed are the analytical results for sample(s) received by the laboratory on November 15, 2012. The results relate only to the samples included in this report. Results reported herein conform to the most current TNI standards and the laboratory's Quality Assurance Manual, where applicable, unless otherwise noted in the body of the report.

If you have any questions concerning this report, please feel free to contact me.

Sincerely,



Tina Sayer

tina.sayer@pacelabs.com  
Project Manager

Enclosures



#### REPORT OF LABORATORY ANALYSIS

This report shall not be reproduced, except in full,  
without the written consent of Pace Analytical Services, Inc..

## CERTIFICATIONS

Project: MI Plaza M01046  
Pace Project No.: 5072339

---

### Indiana Certification IDs

7726 Moller Road, Indianapolis, IN 46268  
Illinois Certification #: 200074  
Indiana Certification #: C-49-06  
Kansas Certification #: E-10247  
Kentucky Certification #: 0042

Louisiana/NELAC Certification #: 04076  
Ohio VAP Certification #: CL0065  
Pennsylvania Certification #: 68-04991  
West Virginia Certification #: 330

### Ohio Certification IDs

1233 Dublin Road, Columbus, OH 43215  
Indiana Drinking Water Certification #: C-OH-11  
NVLAP Certification #: 90132

Ohio Microbiology Certification #: 943  
Ohio Drinking Water Certification #: 1030

## REPORT OF LABORATORY ANALYSIS

Page 2 of 39

This report shall not be reproduced, except in full,  
without the written consent of Pace Analytical Services, Inc..

## SAMPLE SUMMARY

Project: MI Plaza M01046

Pace Project No.: 5072339

Lab ID	Sample ID	Matrix	Date Collected	Date Received
5072339001	<b>MMW-6D</b>	Water	11/13/12 10:56	11/15/12 10:50
5072339002	<b>MMW-4D</b>	Water	11/13/12 11:31	11/15/12 10:50
5072339003	<b>MMW-13D</b>	Water	11/13/12 12:03	11/15/12 10:50
5072339004	<b>MMW-11D</b>	Water	11/13/12 12:58	11/15/12 10:50
5072339005	<b>MMW-11S</b>	Water	11/13/12 13:26	11/15/12 10:50
5072339006	<b>MMW-12S</b>	Water	11/13/12 13:56	11/15/12 10:50
5072339007	<b>MMW-14D</b>	Water	11/13/12 14:27	11/15/12 10:50
5072339008	<b>MMW-P-9S</b>	Water	11/13/12 15:06	11/15/12 10:50
5072339009	<b>MMW-P-9D</b>	Water	11/13/12 15:28	11/15/12 10:50
5072339010	<b>MMW-C-02S</b>	Water	11/13/12 15:55	11/15/12 10:50
5072339011	Trip Blank	Water	11/13/12 08:00	11/15/12 10:50
5072339012	<b>MMW-P-03S</b>	Water	11/14/12 09:32	11/15/12 10:50
5072339013	<b>MMW-P-03D</b>	Water	11/14/12 10:00	11/15/12 10:50
5072339014	Dup 1	Water	11/14/12 08:00	11/15/12 10:50
5072339015	<b>MMW-P-02</b>	Water	11/14/12 10:44	11/15/12 10:50
5072339016	<b>MMW-P-05</b>	Water	11/14/12 11:30	11/15/12 10:50
5072339017	<b>MMW-P-10S</b>	Water	11/14/12 12:06	11/15/12 10:50
5072339018	<b>MMW-P-10D</b>	Water	11/14/12 12:40	11/15/12 10:50
5072339019	<b>MMW-P-08</b>	Water	11/14/12 13:18	11/15/12 10:50
5072339020	<b>MMW-P-07</b>	Water	11/14/12 13:47	11/15/12 10:50
5072339021	<b>MMW-P-01</b>	Water	11/14/12 14:21	11/15/12 10:50
5072339022	<b>MMW-P-06</b>	Water	11/14/12 14:55	11/15/12 10:50
5072339023	<b>MMW-9S</b>	Water	11/14/12 15:36	11/15/12 10:50

## REPORT OF LABORATORY ANALYSIS

Page 3 of 39

This report shall not be reproduced, except in full,  
without the written consent of Pace Analytical Services, Inc..

## SAMPLE ANALYTE COUNT

Project: MI Plaza M01046  
Pace Project No.: 5072339

Lab ID	Sample ID	Method	Analysts	Analytes Reported
5072339001	MMW-6D	EPA 8260	JLZ	18
5072339002	MMW-4D	EPA 8260	ALA	18
5072339003	MMW-13D	EPA 8260	ALA	18
5072339004	MMW-11D	EPA 8260	ALA	18
5072339005	MMW-11S	EPA 8260	JLZ	18
5072339006	MMW-12S	EPA 8260	ALA	18
5072339007	MMW-14D	EPA 8260	ALA, JLZ	18
5072339008	MMW-P-9S	EPA 8260	JLZ	18
5072339009	MMW-P-9D	EPA 8260	ALA	18
5072339010	MMW-C-02S	EPA 8260	ALA	18
5072339011	Trip Blank	EPA 8260	JLZ	18
5072339012	MMW-P-03S	EPA 8260	GRM	18
		SM 5310C	GR1	1
		ASTM D516-90,02	DAE	1
		EPA 353.2	ILP	2
5072339013	MMW-P-03D	EPA 8260	JLZ	18
		SM 5310C	GR1	1
		ASTM D516-90,02	DAE	1
		EPA 353.2	ILP	2
5072339014	Dup 1	EPA 8260	JLZ	18
		SM 5310C	GR1	1
		ASTM D516-90,02	DAE	1
		EPA 353.2	ILP	2
5072339015	MMW-P-02	EPA 8260	GRM	18
		SM 5310C	GR1	1
		ASTM D516-90,02	DAE	1
		EPA 353.2	ILP	2
5072339016	MMW-P-05	EPA 8260	JLZ	18
		SM 5310C	GR1	1
		ASTM D516-90,02	DAE	1
		EPA 353.2	ILP	2
5072339017	MMW-P-10S	EPA 8260	JLZ	18
		SM 5310C	GR1	1
		ASTM D516-90,02	DAE	1
		EPA 353.2	ILP	2
5072339018	MMW-P-10D	EPA 8260	GRM	18
		SM 5310C	GR1	1

## REPORT OF LABORATORY ANALYSIS

Page 4 of 39

This report shall not be reproduced, except in full,  
without the written consent of Pace Analytical Services, Inc..

## SAMPLE ANALYTE COUNT

Project: MI Plaza M01046  
Pace Project No.: 5072339

Lab ID	Sample ID	Method	Analysts	Analytes Reported
5072339019	MMW-P-08	ASTM D516-90,02	DAE	1
		EPA 353.2	ILP	2
		EPA 8260	GRM	18
		SM 5310C	GR1	1
		ASTM D516-90,02	DAE	1
		EPA 353.2	ILP	2
5072339020	MMW-P-07	EPA 8260	GRM	18
		SM 5310C	GR1	1
		ASTM D516-90,02	DAE	1
		EPA 353.2	ILP	2
5072339021	MMW-P-01	EPA 8260	GRM	18
		SM 5310C	GR1	1
		ASTM D516-90,02	DAE	1
		EPA 353.2	ILP	2
5072339022	MMW-P-06	EPA 8260	GRM	18
		SM 5310C	GR1	1
		ASTM D516-90,02	DAE	1
		EPA 353.2	ILP	2
5072339023	MMW-9S	EPA 8260	GRM	18
		SM 5310C	GR1	1
		ASTM D516-90,02	DAE	1
		EPA 353.2	ILP	2

## REPORT OF LABORATORY ANALYSIS

Page 5 of 39

This report shall not be reproduced, except in full,  
without the written consent of Pace Analytical Services, Inc..

## ANALYTICAL RESULTS

Project: MI Plaza M01046

Pace Project No.: 5072339

Sample: MMW-6D	Lab ID: 5072339001	Collected: 11/13/12 10:56	Received: 11/15/12 10:50	Matrix: Water				
Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
<b>8260 MSV</b>	Analytical Method: EPA 8260							
Benzene	ND	ug/L	5.0	1		11/27/12 14:51	71-43-2	
Carbon tetrachloride	ND	ug/L	5.0	1		11/27/12 14:51	56-23-5	
Chloroform	ND	ug/L	5.0	1		11/27/12 14:51	67-66-3	
1,1-Dichloroethene	ND	ug/L	5.0	1		11/27/12 14:51	75-35-4	
cis-1,2-Dichloroethene	ND	ug/L	5.0	1		11/27/12 14:51	156-59-2	
trans-1,2-Dichloroethene	ND	ug/L	5.0	1		11/27/12 14:51	156-60-5	
Ethylbenzene	ND	ug/L	5.0	1		11/27/12 14:51	100-41-4	
Methylene Chloride	ND	ug/L	5.0	1		11/27/12 14:51	75-09-2	
Naphthalene	ND	ug/L	5.0	1		11/27/12 14:51	91-20-3	
Tetrachloroethene	ND	ug/L	5.0	1		11/27/12 14:51	127-18-4	
Toluene	ND	ug/L	5.0	1		11/27/12 14:51	108-88-3	
1,1,1-Trichloroethane	ND	ug/L	5.0	1		11/27/12 14:51	71-55-6	
Trichloroethene	ND	ug/L	5.0	1		11/27/12 14:51	79-01-6	
Vinyl chloride	57.5	ug/L	2.0	1		11/27/12 14:51	75-01-4	
Xylene (Total)	ND	ug/L	10.0	1		11/27/12 14:51	1330-20-7	
<b>Surrogates</b>								
Dibromofluoromethane (S)	98 %.		83-123	1		11/27/12 14:51	1868-53-7	
4-Bromofluorobenzene (S)	103 %.		72-125	1		11/27/12 14:51	460-00-4	
Toluene-d8 (S)	99 %.		81-114	1		11/27/12 14:51	2037-26-5	

## ANALYTICAL RESULTS

Project: MI Plaza M01046

Pace Project No.: 5072339

Sample: MMW-4D	Lab ID: 5072339002	Collected: 11/13/12 11:31	Received: 11/15/12 10:50	Matrix: Water				
Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
<b>8260 MSV</b>	Analytical Method: EPA 8260							
Benzene	ND	ug/L	5.0	1		11/21/12 16:53	71-43-2	
Carbon tetrachloride	ND	ug/L	5.0	1		11/21/12 16:53	56-23-5	
Chloroform	ND	ug/L	5.0	1		11/21/12 16:53	67-66-3	
1,1-Dichloroethene	ND	ug/L	5.0	1		11/21/12 16:53	75-35-4	
cis-1,2-Dichloroethene	463	ug/L	50.0	10		11/21/12 17:27	156-59-2	
trans-1,2-Dichloroethene	ND	ug/L	5.0	1		11/21/12 16:53	156-60-5	
Ethylbenzene	ND	ug/L	5.0	1		11/21/12 16:53	100-41-4	
Methylene Chloride	ND	ug/L	5.0	1		11/21/12 16:53	75-09-2	
Naphthalene	ND	ug/L	5.0	1		11/21/12 16:53	91-20-3	
Tetrachloroethene	ND	ug/L	5.0	1		11/21/12 16:53	127-18-4	
Toluene	ND	ug/L	5.0	1		11/21/12 16:53	108-88-3	
1,1,1-Trichloroethane	ND	ug/L	5.0	1		11/21/12 16:53	71-55-6	
Trichloroethene	ND	ug/L	5.0	1		11/21/12 16:53	79-01-6	
Vinyl chloride	164	ug/L	2.0	1		11/21/12 16:53	75-01-4	
Xylene (Total)	ND	ug/L	10.0	1		11/21/12 16:53	1330-20-7	
<b>Surrogates</b>								
Dibromofluoromethane (S)	96 %.		83-123	1		11/21/12 16:53	1868-53-7	
4-Bromofluorobenzene (S)	100 %.		72-125	1		11/21/12 16:53	460-00-4	
Toluene-d8 (S)	101 %.		81-114	1		11/21/12 16:53	2037-26-5	

## ANALYTICAL RESULTS

Project: MI Plaza M01046

Pace Project No.: 5072339

Sample: MMW-13D	Lab ID: 5072339003	Collected: 11/13/12 12:03	Received: 11/15/12 10:50	Matrix: Water				
Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
<b>8260 MSV</b>	Analytical Method: EPA 8260							
Benzene	ND	ug/L	5.0	1		11/21/12 18:00	71-43-2	
Carbon tetrachloride	ND	ug/L	5.0	1		11/21/12 18:00	56-23-5	
Chloroform	ND	ug/L	5.0	1		11/21/12 18:00	67-66-3	
1,1-Dichloroethene	ND	ug/L	5.0	1		11/21/12 18:00	75-35-4	
cis-1,2-Dichloroethene	765	ug/L	50.0	10		11/21/12 18:34	156-59-2	
trans-1,2-Dichloroethene	ND	ug/L	5.0	1		11/21/12 18:00	156-60-5	
Ethylbenzene	ND	ug/L	5.0	1		11/21/12 18:00	100-41-4	
Methylene Chloride	ND	ug/L	5.0	1		11/21/12 18:00	75-09-2	
Naphthalene	ND	ug/L	5.0	1		11/21/12 18:00	91-20-3	
Tetrachloroethene	ND	ug/L	5.0	1		11/21/12 18:00	127-18-4	
Toluene	ND	ug/L	5.0	1		11/21/12 18:00	108-88-3	
1,1,1-Trichloroethane	ND	ug/L	5.0	1		11/21/12 18:00	71-55-6	
Trichloroethene	ND	ug/L	5.0	1		11/21/12 18:00	79-01-6	
Vinyl chloride	135	ug/L	2.0	1		11/21/12 18:00	75-01-4	
Xylene (Total)	ND	ug/L	10.0	1		11/21/12 18:00	1330-20-7	
<b>Surrogates</b>								
Dibromofluoromethane (S)	97 %.		83-123	1		11/21/12 18:00	1868-53-7	
4-Bromofluorobenzene (S)	102 %.		72-125	1		11/21/12 18:00	460-00-4	
Toluene-d8 (S)	105 %.		81-114	1		11/21/12 18:00	2037-26-5	

## ANALYTICAL RESULTS

Project: MI Plaza M01046

Pace Project No.: 5072339

Sample: MMW-11D	Lab ID: 5072339004	Collected: 11/13/12 12:58	Received: 11/15/12 10:50	Matrix: Water				
Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
<b>8260 MSV</b>	Analytical Method: EPA 8260							
Benzene	ND	ug/L	5.0	1		11/21/12 19:08	71-43-2	
Carbon tetrachloride	ND	ug/L	5.0	1		11/21/12 19:08	56-23-5	
Chloroform	ND	ug/L	5.0	1		11/21/12 19:08	67-66-3	
1,1-Dichloroethene	ND	ug/L	5.0	1		11/21/12 19:08	75-35-4	
cis-1,2-Dichloroethene	<b>309</b>	ug/L	50.0	10		11/21/12 19:42	156-59-2	
trans-1,2-Dichloroethene	<b>14.6</b>	ug/L	5.0	1		11/21/12 19:08	156-60-5	
Ethylbenzene	ND	ug/L	5.0	1		11/21/12 19:08	100-41-4	
Methylene Chloride	ND	ug/L	5.0	1		11/21/12 19:08	75-09-2	
Naphthalene	ND	ug/L	5.0	1		11/21/12 19:08	91-20-3	
Tetrachloroethene	ND	ug/L	5.0	1		11/21/12 19:08	127-18-4	
Toluene	ND	ug/L	5.0	1		11/21/12 19:08	108-88-3	
1,1,1-Trichloroethane	ND	ug/L	5.0	1		11/21/12 19:08	71-55-6	
Trichloroethene	ND	ug/L	5.0	1		11/21/12 19:08	79-01-6	
Vinyl chloride	<b>2.9</b>	ug/L	2.0	1		11/21/12 19:08	75-01-4	
Xylene (Total)	ND	ug/L	10.0	1		11/21/12 19:08	1330-20-7	
<b>Surrogates</b>								
Dibromofluoromethane (S)	96 %.		83-123	1		11/21/12 19:08	1868-53-7	
4-Bromofluorobenzene (S)	102 %.		72-125	1		11/21/12 19:08	460-00-4	
Toluene-d8 (S)	104 %.		81-114	1		11/21/12 19:08	2037-26-5	

## ANALYTICAL RESULTS

Project: MI Plaza M01046

Pace Project No.: 5072339

Sample: MMW-11S	Lab ID: 5072339005	Collected: 11/13/12 13:26	Received: 11/15/12 10:50	Matrix: Water				
Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
<b>8260 MSV</b>	Analytical Method: EPA 8260							
Benzene	ND	ug/L	5.0	1		11/27/12 15:24	71-43-2	
Carbon tetrachloride	ND	ug/L	5.0	1		11/27/12 15:24	56-23-5	
Chloroform	ND	ug/L	5.0	1		11/27/12 15:24	67-66-3	
1,1-Dichloroethene	ND	ug/L	5.0	1		11/27/12 15:24	75-35-4	
cis-1,2-Dichloroethene	<b>27.6</b>	ug/L	5.0	1		11/27/12 15:24	156-59-2	
trans-1,2-Dichloroethene	ND	ug/L	5.0	1		11/27/12 15:24	156-60-5	
Ethylbenzene	ND	ug/L	5.0	1		11/27/12 15:24	100-41-4	
Methylene Chloride	ND	ug/L	5.0	1		11/27/12 15:24	75-09-2	
Naphthalene	ND	ug/L	5.0	1		11/27/12 15:24	91-20-3	
Tetrachloroethene	ND	ug/L	5.0	1		11/27/12 15:24	127-18-4	
Toluene	ND	ug/L	5.0	1		11/27/12 15:24	108-88-3	
1,1,1-Trichloroethane	ND	ug/L	5.0	1		11/27/12 15:24	71-55-6	
Trichloroethene	ND	ug/L	5.0	1		11/27/12 15:24	79-01-6	
Vinyl chloride	ND	ug/L	2.0	1		11/27/12 15:24	75-01-4	
Xylene (Total)	ND	ug/L	10.0	1		11/27/12 15:24	1330-20-7	
<b>Surrogates</b>								
Dibromofluoromethane (S)	101 %.		83-123	1		11/27/12 15:24	1868-53-7	
4-Bromofluorobenzene (S)	102 %.		72-125	1		11/27/12 15:24	460-00-4	
Toluene-d8 (S)	101 %.		81-114	1		11/27/12 15:24	2037-26-5	

## ANALYTICAL RESULTS

Project: MI Plaza M01046

Pace Project No.: 5072339

Sample: MMW-12S	Lab ID: 5072339006	Collected: 11/13/12 13:56	Received: 11/15/12 10:50	Matrix: Water				
Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
<b>8260 MSV</b>	Analytical Method: EPA 8260							
Benzene	ND	ug/L	5.0	1		11/21/12 20:49	71-43-2	
Carbon tetrachloride	ND	ug/L	5.0	1		11/21/12 20:49	56-23-5	
Chloroform	ND	ug/L	5.0	1		11/21/12 20:49	67-66-3	
1,1-Dichloroethene	ND	ug/L	5.0	1		11/21/12 20:49	75-35-4	
cis-1,2-Dichloroethene	<b>84.3</b>	ug/L	5.0	1		11/21/12 20:49	156-59-2	
trans-1,2-Dichloroethene	ND	ug/L	5.0	1		11/21/12 20:49	156-60-5	
Ethylbenzene	ND	ug/L	5.0	1		11/21/12 20:49	100-41-4	
Methylene Chloride	ND	ug/L	5.0	1		11/21/12 20:49	75-09-2	
Naphthalene	ND	ug/L	5.0	1		11/21/12 20:49	91-20-3	
Tetrachloroethene	ND	ug/L	5.0	1		11/21/12 20:49	127-18-4	
Toluene	ND	ug/L	5.0	1		11/21/12 20:49	108-88-3	
1,1,1-Trichloroethane	ND	ug/L	5.0	1		11/21/12 20:49	71-55-6	
Trichloroethene	ND	ug/L	5.0	1		11/21/12 20:49	79-01-6	
Vinyl chloride	<b>5.3</b>	ug/L	2.0	1		11/21/12 20:49	75-01-4	
Xylene (Total)	ND	ug/L	10.0	1		11/21/12 20:49	1330-20-7	
<b>Surrogates</b>								
Dibromofluoromethane (S)	98 %.		83-123	1		11/21/12 20:49	1868-53-7	
4-Bromofluorobenzene (S)	100 %.		72-125	1		11/21/12 20:49	460-00-4	
Toluene-d8 (S)	103 %.		81-114	1		11/21/12 20:49	2037-26-5	

## ANALYTICAL RESULTS

Project: MI Plaza M01046

Pace Project No.: 5072339

Sample: MMW-14D	Lab ID: 5072339007	Collected: 11/13/12 14:27	Received: 11/15/12 10:50	Matrix: Water				
Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
<b>8260 MSV</b>	Analytical Method: EPA 8260							
Benzene	ND	ug/L	5.0	1		11/27/12 15:57	71-43-2	
Carbon tetrachloride	ND	ug/L	5.0	1		11/27/12 15:57	56-23-5	
Chloroform	ND	ug/L	5.0	1		11/27/12 15:57	67-66-3	
1,1-Dichloroethene	ND	ug/L	5.0	1		11/27/12 15:57	75-35-4	
cis-1,2-Dichloroethene	<b>1010</b>	ug/L	50.0	10		11/21/12 21:57	156-59-2	
trans-1,2-Dichloroethene	<b>10</b>	ug/L	5.0	1		11/27/12 15:57	156-60-5	
Ethylbenzene	ND	ug/L	5.0	1		11/27/12 15:57	100-41-4	
Methylene Chloride	ND	ug/L	5.0	1		11/27/12 15:57	75-09-2	
Naphthalene	ND	ug/L	5.0	1		11/27/12 15:57	91-20-3	
Tetrachloroethene	ND	ug/L	5.0	1		11/27/12 15:57	127-18-4	
Toluene	ND	ug/L	5.0	1		11/27/12 15:57	108-88-3	
1,1,1-Trichloroethane	ND	ug/L	5.0	1		11/27/12 15:57	71-55-6	
Trichloroethene	ND	ug/L	5.0	1		11/27/12 15:57	79-01-6	
Vinyl chloride	<b>105</b>	ug/L	2.0	1		11/27/12 15:57	75-01-4	
Xylene (Total)	ND	ug/L	10.0	1		11/27/12 15:57	1330-20-7	
<b>Surrogates</b>								
Dibromofluoromethane (S)	93 %.		83-123	1		11/27/12 15:57	1868-53-7	
4-Bromofluorobenzene (S)	98 %.		72-125	1		11/27/12 15:57	460-00-4	
Toluene-d8 (S)	95 %.		81-114	1		11/27/12 15:57	2037-26-5	

## ANALYTICAL RESULTS

Project: MI Plaza M01046

Pace Project No.: 5072339

Sample: MMW-P-9S	Lab ID: 5072339008	Collected: 11/13/12 15:06	Received: 11/15/12 10:50	Matrix: Water				
Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
<b>8260 MSV</b>	Analytical Method: EPA 8260							
Benzene	ND	ug/L	5.0	1		11/27/12 16:30	71-43-2	
Carbon tetrachloride	ND	ug/L	5.0	1		11/27/12 16:30	56-23-5	
Chloroform	ND	ug/L	5.0	1		11/27/12 16:30	67-66-3	
1,1-Dichloroethene	ND	ug/L	5.0	1		11/27/12 16:30	75-35-4	
cis-1,2-Dichloroethene	ND	ug/L	5.0	1		11/27/12 16:30	156-59-2	
trans-1,2-Dichloroethene	ND	ug/L	5.0	1		11/27/12 16:30	156-60-5	
Ethylbenzene	ND	ug/L	5.0	1		11/27/12 16:30	100-41-4	
Methylene Chloride	ND	ug/L	5.0	1		11/27/12 16:30	75-09-2	
Naphthalene	ND	ug/L	5.0	1		11/27/12 16:30	91-20-3	
Tetrachloroethene	ND	ug/L	5.0	1		11/27/12 16:30	127-18-4	
Toluene	ND	ug/L	5.0	1		11/27/12 16:30	108-88-3	
1,1,1-Trichloroethane	ND	ug/L	5.0	1		11/27/12 16:30	71-55-6	
Trichloroethene	ND	ug/L	5.0	1		11/27/12 16:30	79-01-6	
Vinyl chloride	ND	ug/L	2.0	1		11/27/12 16:30	75-01-4	
Xylene (Total)	ND	ug/L	10.0	1		11/27/12 16:30	1330-20-7	
<b>Surrogates</b>								
Dibromofluoromethane (S)	98 %.		83-123	1		11/27/12 16:30	1868-53-7	
4-Bromofluorobenzene (S)	100 %.		72-125	1		11/27/12 16:30	460-00-4	
Toluene-d8 (S)	101 %.		81-114	1		11/27/12 16:30	2037-26-5	

## ANALYTICAL RESULTS

Project: MI Plaza M01046

Pace Project No.: 5072339

Sample: MMW-P-9D	Lab ID: 5072339009	Collected: 11/13/12 15:28	Received: 11/15/12 10:50	Matrix: Water				
Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
<b>8260 MSV</b>	Analytical Method: EPA 8260							
Benzene	ND	ug/L	5.0	1		11/21/12 22:31	71-43-2	
Carbon tetrachloride	ND	ug/L	5.0	1		11/21/12 22:31	56-23-5	
Chloroform	ND	ug/L	5.0	1		11/21/12 22:31	67-66-3	
1,1-Dichloroethene	ND	ug/L	5.0	1		11/21/12 22:31	75-35-4	
cis-1,2-Dichloroethene	ND	ug/L	5.0	1		11/21/12 22:31	156-59-2	
trans-1,2-Dichloroethene	ND	ug/L	5.0	1		11/21/12 22:31	156-60-5	
Ethylbenzene	ND	ug/L	5.0	1		11/21/12 22:31	100-41-4	
Methylene Chloride	ND	ug/L	5.0	1		11/21/12 22:31	75-09-2	
Naphthalene	ND	ug/L	5.0	1		11/21/12 22:31	91-20-3	
Tetrachloroethene	ND	ug/L	5.0	1		11/21/12 22:31	127-18-4	
Toluene	ND	ug/L	5.0	1		11/21/12 22:31	108-88-3	
1,1,1-Trichloroethane	ND	ug/L	5.0	1		11/21/12 22:31	71-55-6	
Trichloroethene	ND	ug/L	5.0	1		11/21/12 22:31	79-01-6	
Vinyl chloride	61.6	ug/L	2.0	1		11/21/12 22:31	75-01-4	
Xylene (Total)	ND	ug/L	10.0	1		11/21/12 22:31	1330-20-7	
<b>Surrogates</b>								
Dibromofluoromethane (S)	100 %.		83-123	1		11/21/12 22:31	1868-53-7	
4-Bromofluorobenzene (S)	103 %.		72-125	1		11/21/12 22:31	460-00-4	
Toluene-d8 (S)	103 %.		81-114	1		11/21/12 22:31	2037-26-5	

## ANALYTICAL RESULTS

Project: MI Plaza M01046

Pace Project No.: 5072339

Sample: MMW-C-02S	Lab ID: 5072339010	Collected: 11/13/12 15:55	Received: 11/15/12 10:50	Matrix: Water				
Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
<b>8260 MSV</b>	Analytical Method: EPA 8260							
Benzene	ND	ug/L	5.0	1		11/21/12 23:05	71-43-2	
Carbon tetrachloride	ND	ug/L	5.0	1		11/21/12 23:05	56-23-5	
Chloroform	ND	ug/L	5.0	1		11/21/12 23:05	67-66-3	
1,1-Dichloroethene	ND	ug/L	5.0	1		11/21/12 23:05	75-35-4	
cis-1,2-Dichloroethene	ND	ug/L	5.0	1		11/21/12 23:05	156-59-2	
trans-1,2-Dichloroethene	ND	ug/L	5.0	1		11/21/12 23:05	156-60-5	
Ethylbenzene	ND	ug/L	5.0	1		11/21/12 23:05	100-41-4	
Methylene Chloride	ND	ug/L	5.0	1		11/21/12 23:05	75-09-2	
Naphthalene	ND	ug/L	5.0	1		11/21/12 23:05	91-20-3	
Tetrachloroethene	ND	ug/L	5.0	1		11/21/12 23:05	127-18-4	
Toluene	ND	ug/L	5.0	1		11/21/12 23:05	108-88-3	
1,1,1-Trichloroethane	ND	ug/L	5.0	1		11/21/12 23:05	71-55-6	
Trichloroethene	ND	ug/L	5.0	1		11/21/12 23:05	79-01-6	
Vinyl chloride	ND	ug/L	2.0	1		11/21/12 23:05	75-01-4	
Xylene (Total)	ND	ug/L	10.0	1		11/21/12 23:05	1330-20-7	
<b>Surrogates</b>								
Dibromofluoromethane (S)	99 %.		83-123	1		11/21/12 23:05	1868-53-7	
4-Bromofluorobenzene (S)	103 %.		72-125	1		11/21/12 23:05	460-00-4	
Toluene-d8 (S)	103 %.		81-114	1		11/21/12 23:05	2037-26-5	

## ANALYTICAL RESULTS

Project: MI Plaza M01046

Pace Project No.: 5072339

Sample: Trip Blank	Lab ID: 5072339011	Collected: 11/13/12 08:00	Received: 11/15/12 10:50	Matrix: Water				
Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
<b>8260 MSV</b>	Analytical Method: EPA 8260							
Benzene	ND	ug/L	5.0	1		11/27/12 17:03	71-43-2	
Carbon tetrachloride	ND	ug/L	5.0	1		11/27/12 17:03	56-23-5	
Chloroform	ND	ug/L	5.0	1		11/27/12 17:03	67-66-3	
1,1-Dichloroethene	ND	ug/L	5.0	1		11/27/12 17:03	75-35-4	
cis-1,2-Dichloroethene	ND	ug/L	5.0	1		11/27/12 17:03	156-59-2	
trans-1,2-Dichloroethene	ND	ug/L	5.0	1		11/27/12 17:03	156-60-5	
Ethylbenzene	ND	ug/L	5.0	1		11/27/12 17:03	100-41-4	
Methylene Chloride	ND	ug/L	5.0	1		11/27/12 17:03	75-09-2	
Naphthalene	ND	ug/L	5.0	1		11/27/12 17:03	91-20-3	
Tetrachloroethene	ND	ug/L	5.0	1		11/27/12 17:03	127-18-4	
Toluene	ND	ug/L	5.0	1		11/27/12 17:03	108-88-3	
1,1,1-Trichloroethane	ND	ug/L	5.0	1		11/27/12 17:03	71-55-6	
Trichloroethene	ND	ug/L	5.0	1		11/27/12 17:03	79-01-6	
Vinyl chloride	ND	ug/L	2.0	1		11/27/12 17:03	75-01-4	
Xylene (Total)	ND	ug/L	10.0	1		11/27/12 17:03	1330-20-7	
<b>Surrogates</b>								
Dibromofluoromethane (S)	99 %.		83-123	1		11/27/12 17:03	1868-53-7	
4-Bromofluorobenzene (S)	97 %.		72-125	1		11/27/12 17:03	460-00-4	
Toluene-d8 (S)	99 %.		81-114	1		11/27/12 17:03	2037-26-5	

## ANALYTICAL RESULTS

Project: MI Plaza M01046

Pace Project No.: 5072339

Sample: MMW-P-03S	Lab ID: 5072339012	Collected: 11/14/12 09:32	Received: 11/15/12 10:50	Matrix: Water				
Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
<b>8260 MSV</b>	Analytical Method: EPA 8260							
Benzene	ND	ug/L	5.0	1		11/28/12 01:24	71-43-2	
Carbon tetrachloride	ND	ug/L	5.0	1		11/28/12 01:24	56-23-5	
Chloroform	ND	ug/L	5.0	1		11/28/12 01:24	67-66-3	
1,1-Dichloroethene	ND	ug/L	5.0	1		11/28/12 01:24	75-35-4	
cis-1,2-Dichloroethene	12.3	ug/L	5.0	1		11/28/12 01:24	156-59-2	
trans-1,2-Dichloroethene	ND	ug/L	5.0	1		11/28/12 01:24	156-60-5	
Ethylbenzene	ND	ug/L	5.0	1		11/28/12 01:24	100-41-4	
Methylene Chloride	ND	ug/L	5.0	1		11/28/12 01:24	75-09-2	
Naphthalene	ND	ug/L	5.0	1		11/28/12 01:24	91-20-3	
Tetrachloroethene	ND	ug/L	5.0	1		11/28/12 01:24	127-18-4	
Toluene	ND	ug/L	5.0	1		11/28/12 01:24	108-88-3	
1,1,1-Trichloroethane	ND	ug/L	5.0	1		11/28/12 01:24	71-55-6	
Trichloroethene	ND	ug/L	5.0	1		11/28/12 01:24	79-01-6	
Vinyl chloride	113	ug/L	2.0	1		11/28/12 01:24	75-01-4	
Xylene (Total)	ND	ug/L	10.0	1		11/28/12 01:24	1330-20-7	
<b>Surrogates</b>								
Dibromofluoromethane (S)	101 %.		83-123	1		11/28/12 01:24	1868-53-7	
4-Bromofluorobenzene (S)	99 %.		72-125	1		11/28/12 01:24	460-00-4	
Toluene-d8 (S)	98 %.		81-114	1		11/28/12 01:24	2037-26-5	
<b>5310C TOC</b>	Analytical Method: SM 5310C							
Total Organic Carbon	1.9	mg/L	0.30	1		11/17/12 13:57	7440-44-0	N2
<b>ASTM D516-9002 Sulfate Water</b>	Analytical Method: ASTM D516-90,02							
Sulfate	32.0	mg/L	12.5	1		11/16/12 16:43	14808-79-8	N2
<b>353.2 Nitrogen, NO<sub>2</sub>/NO<sub>3</sub> unpres</b>	Analytical Method: EPA 353.2							
Nitrogen, Nitrate	ND	mg/L	0.10	1		11/16/12 08:04		
Nitrogen, Nitrite	ND	mg/L	0.10	1		11/16/12 08:04		

## ANALYTICAL RESULTS

Project: MI Plaza M01046

Pace Project No.: 5072339

Sample: MMW-P-03D	Lab ID: 5072339013	Collected: 11/14/12 10:00	Received: 11/15/12 10:50	Matrix: Water				
Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
<b>8260 MSV</b>	Analytical Method: EPA 8260							
Benzene	ND	ug/L	5.0	1		11/27/12 17:36	71-43-2	
Carbon tetrachloride	ND	ug/L	5.0	1		11/27/12 17:36	56-23-5	
Chloroform	ND	ug/L	5.0	1		11/27/12 17:36	67-66-3	
1,1-Dichloroethene	ND	ug/L	5.0	1		11/27/12 17:36	75-35-4	
cis-1,2-Dichloroethene	ND	ug/L	5.0	1		11/27/12 17:36	156-59-2	
trans-1,2-Dichloroethene	ND	ug/L	5.0	1		11/27/12 17:36	156-60-5	
Ethylbenzene	ND	ug/L	5.0	1		11/27/12 17:36	100-41-4	
Methylene Chloride	ND	ug/L	5.0	1		11/27/12 17:36	75-09-2	
Naphthalene	ND	ug/L	5.0	1		11/27/12 17:36	91-20-3	
Tetrachloroethene	ND	ug/L	5.0	1		11/27/12 17:36	127-18-4	
Toluene	ND	ug/L	5.0	1		11/27/12 17:36	108-88-3	
1,1,1-Trichloroethane	ND	ug/L	5.0	1		11/27/12 17:36	71-55-6	
Trichloroethene	ND	ug/L	5.0	1		11/27/12 17:36	79-01-6	
Vinyl chloride	17.3	ug/L	2.0	1		11/27/12 17:36	75-01-4	
Xylene (Total)	ND	ug/L	10.0	1		11/27/12 17:36	1330-20-7	
<b>Surrogates</b>								
Dibromofluoromethane (S)	97 %.		83-123	1		11/27/12 17:36	1868-53-7	
4-Bromofluorobenzene (S)	101 %.		72-125	1		11/27/12 17:36	460-00-4	
Toluene-d8 (S)	101 %.		81-114	1		11/27/12 17:36	2037-26-5	
<b>5310C TOC</b>	Analytical Method: SM 5310C							
Total Organic Carbon	11.3	mg/L	0.30	1		11/17/12 14:21	7440-44-0	N2
<b>ASTM D516-9002 Sulfate Water</b>	Analytical Method: ASTM D516-90,02							
Sulfate	8.8	mg/L	5.0	1		11/16/12 16:43	14808-79-8	N2
<b>353.2 Nitrogen, NO<sub>2</sub>/NO<sub>3</sub> unpres</b>	Analytical Method: EPA 353.2							
Nitrogen, Nitrate	ND	mg/L	0.10	1		11/16/12 08:05		
Nitrogen, Nitrite	ND	mg/L	0.10	1		11/16/12 08:05		

## ANALYTICAL RESULTS

Project: MI Plaza M01046

Pace Project No.: 5072339

Sample: Dup 1	Lab ID: 5072339014	Collected: 11/14/12 08:00	Received: 11/15/12 10:50	Matrix: Water				
Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
<b>8260 MSV</b>	Analytical Method: EPA 8260							
Benzene	ND	ug/L	5.0	1		11/27/12 18:08	71-43-2	
Carbon tetrachloride	ND	ug/L	5.0	1		11/27/12 18:08	56-23-5	
Chloroform	ND	ug/L	5.0	1		11/27/12 18:08	67-66-3	
1,1-Dichloroethene	ND	ug/L	5.0	1		11/27/12 18:08	75-35-4	
cis-1,2-Dichloroethene	ND	ug/L	5.0	1		11/27/12 18:08	156-59-2	
trans-1,2-Dichloroethene	ND	ug/L	5.0	1		11/27/12 18:08	156-60-5	
Ethylbenzene	ND	ug/L	5.0	1		11/27/12 18:08	100-41-4	
Methylene Chloride	ND	ug/L	5.0	1		11/27/12 18:08	75-09-2	
Naphthalene	ND	ug/L	5.0	1		11/27/12 18:08	91-20-3	
Tetrachloroethene	ND	ug/L	5.0	1		11/27/12 18:08	127-18-4	
Toluene	ND	ug/L	5.0	1		11/27/12 18:08	108-88-3	
1,1,1-Trichloroethane	ND	ug/L	5.0	1		11/27/12 18:08	71-55-6	
Trichloroethene	ND	ug/L	5.0	1		11/27/12 18:08	79-01-6	
Vinyl chloride	20.0	ug/L	2.0	1		11/27/12 18:08	75-01-4	
Xylene (Total)	ND	ug/L	10.0	1		11/27/12 18:08	1330-20-7	
<b>Surrogates</b>								
Dibromofluoromethane (S)	99 %.		83-123	1		11/27/12 18:08	1868-53-7	
4-Bromofluorobenzene (S)	98 %.		72-125	1		11/27/12 18:08	460-00-4	
Toluene-d8 (S)	99 %.		81-114	1		11/27/12 18:08	2037-26-5	
<b>5310C TOC</b>	Analytical Method: SM 5310C							
Total Organic Carbon	11.1	mg/L	0.30	1		11/17/12 14:45	7440-44-0	N2
<b>ASTM D516-9002 Sulfate Water</b>	Analytical Method: ASTM D516-90,02							
Sulfate	7.9	mg/L	5.0	1		11/16/12 16:43	14808-79-8	N2
<b>353.2 Nitrogen, NO<sub>2</sub>/NO<sub>3</sub> unpres</b>	Analytical Method: EPA 353.2							
Nitrogen, Nitrate	ND	mg/L	0.10	1		11/16/12 07:58		
Nitrogen, Nitrite	ND	mg/L	0.10	1		11/16/12 07:58		

## ANALYTICAL RESULTS

Project: MI Plaza M01046

Pace Project No.: 5072339

Sample: MMW-P-02	Lab ID: 5072339015	Collected: 11/14/12 10:44	Received: 11/15/12 10:50	Matrix: Water				
Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
<b>8260 MSV</b>	Analytical Method: EPA 8260							
Benzene	ND	ug/L	5.0	1		11/28/12 01:57	71-43-2	
Carbon tetrachloride	ND	ug/L	5.0	1		11/28/12 01:57	56-23-5	
Chloroform	ND	ug/L	5.0	1		11/28/12 01:57	67-66-3	
1,1-Dichloroethene	ND	ug/L	5.0	1		11/28/12 01:57	75-35-4	
cis-1,2-Dichloroethene	<b>54.0</b>	ug/L	5.0	1		11/28/12 01:57	156-59-2	
trans-1,2-Dichloroethene	ND	ug/L	5.0	1		11/28/12 01:57	156-60-5	
Ethylbenzene	ND	ug/L	5.0	1		11/28/12 01:57	100-41-4	
Methylene Chloride	ND	ug/L	5.0	1		11/28/12 01:57	75-09-2	
Naphthalene	ND	ug/L	5.0	1		11/28/12 01:57	91-20-3	
Tetrachloroethene	<b>6.7</b>	ug/L	5.0	1		11/28/12 01:57	127-18-4	
Toluene	ND	ug/L	5.0	1		11/28/12 01:57	108-88-3	
1,1,1-Trichloroethane	ND	ug/L	5.0	1		11/28/12 01:57	71-55-6	
Trichloroethene	ND	ug/L	5.0	1		11/28/12 01:57	79-01-6	
Vinyl chloride	<b>803</b>	ug/L	20.0	10		11/28/12 02:29	75-01-4	
Xylene (Total)	ND	ug/L	10.0	1		11/28/12 01:57	1330-20-7	
<b>Surrogates</b>								
Dibromofluoromethane (S)	98 %.		83-123	1		11/28/12 01:57	1868-53-7	
4-Bromofluorobenzene (S)	97 %.		72-125	1		11/28/12 01:57	460-00-4	
Toluene-d8 (S)	98 %.		81-114	1		11/28/12 01:57	2037-26-5	
<b>5310C TOC</b>	Analytical Method: SM 5310C							
Total Organic Carbon	<b>2.9</b>	mg/L	0.30	1		11/17/12 15:18	7440-44-0	N2
<b>ASTM D516-9002 Sulfate Water</b>	Analytical Method: ASTM D516-90,02							
Sulfate	<b>144</b>	mg/L	25.0	1		11/16/12 16:43	14808-79-8	N2
<b>353.2 Nitrogen, NO<sub>2</sub>/NO<sub>3</sub> unpres</b>	Analytical Method: EPA 353.2							
Nitrogen, Nitrate	ND	mg/L	0.10	1		11/16/12 08:10		
Nitrogen, Nitrite	ND	mg/L	0.10	1		11/16/12 08:10		

## ANALYTICAL RESULTS

Project: MI Plaza M01046

Pace Project No.: 5072339

Sample: MMW-P-05	Lab ID: 5072339016	Collected: 11/14/12 11:30	Received: 11/15/12 10:50	Matrix: Water				
Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
<b>8260 MSV</b>	Analytical Method: EPA 8260							
Benzene	ND	ug/L	5.0	1		11/27/12 18:41	71-43-2	
Carbon tetrachloride	ND	ug/L	5.0	1		11/27/12 18:41	56-23-5	
Chloroform	ND	ug/L	5.0	1		11/27/12 18:41	67-66-3	
1,1-Dichloroethene	ND	ug/L	5.0	1		11/27/12 18:41	75-35-4	
cis-1,2-Dichloroethene	ND	ug/L	5.0	1		11/27/12 18:41	156-59-2	
trans-1,2-Dichloroethene	ND	ug/L	5.0	1		11/27/12 18:41	156-60-5	
Ethylbenzene	ND	ug/L	5.0	1		11/27/12 18:41	100-41-4	
Methylene Chloride	ND	ug/L	5.0	1		11/27/12 18:41	75-09-2	
Naphthalene	ND	ug/L	5.0	1		11/27/12 18:41	91-20-3	
Tetrachloroethene	ND	ug/L	5.0	1		11/27/12 18:41	127-18-4	
Toluene	ND	ug/L	5.0	1		11/27/12 18:41	108-88-3	
1,1,1-Trichloroethane	ND	ug/L	5.0	1		11/27/12 18:41	71-55-6	
Trichloroethene	ND	ug/L	5.0	1		11/27/12 18:41	79-01-6	
Vinyl chloride	151	ug/L	2.0	1		11/27/12 18:41	75-01-4	
Xylene (Total)	ND	ug/L	10.0	1		11/27/12 18:41	1330-20-7	
<b>Surrogates</b>								
Dibromofluoromethane (S)	98 %.		83-123	1		11/27/12 18:41	1868-53-7	
4-Bromofluorobenzene (S)	97 %.		72-125	1		11/27/12 18:41	460-00-4	
Toluene-d8 (S)	98 %.		81-114	1		11/27/12 18:41	2037-26-5	
<b>5310C TOC</b>	Analytical Method: SM 5310C							
Total Organic Carbon	4.2	mg/L	0.30	1		11/17/12 16:36	7440-44-0	N2
<b>ASTM D516-9002 Sulfate Water</b>	Analytical Method: ASTM D516-90,02							
Sulfate	86.8	mg/L	12.5	1		11/16/12 16:43	14808-79-8	N2
<b>353.2 Nitrogen, NO<sub>2</sub>/NO<sub>3</sub> unpres</b>	Analytical Method: EPA 353.2							
Nitrogen, Nitrate	ND	mg/L	0.10	1		11/16/12 08:13		
Nitrogen, Nitrite	ND	mg/L	0.10	1		11/16/12 08:13		

## ANALYTICAL RESULTS

Project: MI Plaza M01046

Pace Project No.: 5072339

Sample: MMW-P-10S	Lab ID: 5072339017	Collected: 11/14/12 12:06	Received: 11/15/12 10:50	Matrix: Water				
Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
<b>8260 MSV</b>	Analytical Method: EPA 8260							
Benzene	ND	ug/L	5.0	1		11/27/12 19:14	71-43-2	
Carbon tetrachloride	ND	ug/L	5.0	1		11/27/12 19:14	56-23-5	
Chloroform	ND	ug/L	5.0	1		11/27/12 19:14	67-66-3	
1,1-Dichloroethene	ND	ug/L	5.0	1		11/27/12 19:14	75-35-4	
cis-1,2-Dichloroethene	ND	ug/L	5.0	1		11/27/12 19:14	156-59-2	
trans-1,2-Dichloroethene	ND	ug/L	5.0	1		11/27/12 19:14	156-60-5	
Ethylbenzene	ND	ug/L	5.0	1		11/27/12 19:14	100-41-4	
Methylene Chloride	ND	ug/L	5.0	1		11/27/12 19:14	75-09-2	
Naphthalene	ND	ug/L	5.0	1		11/27/12 19:14	91-20-3	
Tetrachloroethene	ND	ug/L	5.0	1		11/27/12 19:14	127-18-4	
Toluene	ND	ug/L	5.0	1		11/27/12 19:14	108-88-3	
1,1,1-Trichloroethane	ND	ug/L	5.0	1		11/27/12 19:14	71-55-6	
Trichloroethene	ND	ug/L	5.0	1		11/27/12 19:14	79-01-6	
Vinyl chloride	2.3	ug/L	2.0	1		11/27/12 19:14	75-01-4	
Xylene (Total)	ND	ug/L	10.0	1		11/27/12 19:14	1330-20-7	
<b>Surrogates</b>								
Dibromofluoromethane (S)	93 %.		83-123	1		11/27/12 19:14	1868-53-7	
4-Bromofluorobenzene (S)	99 %.		72-125	1		11/27/12 19:14	460-00-4	
Toluene-d8 (S)	100 %.		81-114	1		11/27/12 19:14	2037-26-5	
<b>5310C TOC</b>	Analytical Method: SM 5310C							
Total Organic Carbon	3.1	mg/L	0.30	1		11/17/12 17:08	7440-44-0	N2
<b>ASTM D516-9002 Sulfate Water</b>	Analytical Method: ASTM D516-90,02							
Sulfate	26.6	mg/L	5.0	1		11/16/12 16:43	14808-79-8	N2
<b>353.2 Nitrogen, NO<sub>2</sub>/NO<sub>3</sub> unpres</b>	Analytical Method: EPA 353.2							
Nitrogen, Nitrate	ND	mg/L	0.10	1		11/16/12 08:14		
Nitrogen, Nitrite	ND	mg/L	0.10	1		11/16/12 08:14		

## ANALYTICAL RESULTS

Project: MI Plaza M01046

Pace Project No.: 5072339

Sample: MMW-P-10D	Lab ID: 5072339018	Collected: 11/14/12 12:40	Received: 11/15/12 10:50	Matrix: Water				
Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
<b>8260 MSV</b>	Analytical Method: EPA 8260							
Benzene	ND	ug/L	5.0	1		11/28/12 03:02	71-43-2	
Carbon tetrachloride	ND	ug/L	5.0	1		11/28/12 03:02	56-23-5	
Chloroform	ND	ug/L	5.0	1		11/28/12 03:02	67-66-3	
1,1-Dichloroethene	ND	ug/L	5.0	1		11/28/12 03:02	75-35-4	
cis-1,2-Dichloroethene	ND	ug/L	5.0	1		11/28/12 03:02	156-59-2	
trans-1,2-Dichloroethene	ND	ug/L	5.0	1		11/28/12 03:02	156-60-5	
Ethylbenzene	ND	ug/L	5.0	1		11/28/12 03:02	100-41-4	
Methylene Chloride	ND	ug/L	5.0	1		11/28/12 03:02	75-09-2	
Naphthalene	ND	ug/L	5.0	1		11/28/12 03:02	91-20-3	
Tetrachloroethene	ND	ug/L	5.0	1		11/28/12 03:02	127-18-4	
Toluene	ND	ug/L	5.0	1		11/28/12 03:02	108-88-3	
1,1,1-Trichloroethane	ND	ug/L	5.0	1		11/28/12 03:02	71-55-6	
Trichloroethene	ND	ug/L	5.0	1		11/28/12 03:02	79-01-6	
Vinyl chloride	964	ug/L	20.0	10		11/28/12 03:34	75-01-4	
Xylene (Total)	ND	ug/L	10.0	1		11/28/12 03:02	1330-20-7	
<b>Surrogates</b>								
Dibromofluoromethane (S)	98 %.		83-123	1		11/28/12 03:02	1868-53-7	
4-Bromofluorobenzene (S)	97 %.		72-125	1		11/28/12 03:02	460-00-4	
Toluene-d8 (S)	98 %.		81-114	1		11/28/12 03:02	2037-26-5	
<b>5310C TOC</b>	Analytical Method: SM 5310C							
Total Organic Carbon	5.0	mg/L	0.30	1		11/17/12 17:33	7440-44-0	N2
<b>ASTM D516-9002 Sulfate Water</b>	Analytical Method: ASTM D516-90,02							
Sulfate	84.5	mg/L	25.0	1		11/16/12 16:43	14808-79-8	N2
<b>353.2 Nitrogen, NO<sub>2</sub>/NO<sub>3</sub> unpres</b>	Analytical Method: EPA 353.2							
Nitrogen, Nitrate	ND	mg/L	0.10	1		11/16/12 08:15		
Nitrogen, Nitrite	ND	mg/L	0.10	1		11/16/12 08:15		

## ANALYTICAL RESULTS

Project: MI Plaza M01046

Pace Project No.: 5072339

Sample: MMW-P-08	Lab ID: 5072339019	Collected: 11/14/12 13:18	Received: 11/15/12 10:50	Matrix: Water				
Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
<b>8260 MSV</b>	Analytical Method: EPA 8260							
Benzene	ND	ug/L	5.0	1		11/28/12 04:07	71-43-2	
Carbon tetrachloride	ND	ug/L	5.0	1		11/28/12 04:07	56-23-5	
Chloroform	ND	ug/L	5.0	1		11/28/12 04:07	67-66-3	
1,1-Dichloroethene	ND	ug/L	5.0	1		11/28/12 04:07	75-35-4	
cis-1,2-Dichloroethene	<b>18.4</b>	ug/L	5.0	1		11/28/12 04:07	156-59-2	
trans-1,2-Dichloroethene	ND	ug/L	5.0	1		11/28/12 04:07	156-60-5	
Ethylbenzene	ND	ug/L	5.0	1		11/28/12 04:07	100-41-4	
Methylene Chloride	ND	ug/L	5.0	1		11/28/12 04:07	75-09-2	
Naphthalene	ND	ug/L	5.0	1		11/28/12 04:07	91-20-3	
Tetrachloroethene	ND	ug/L	5.0	1		11/28/12 04:07	127-18-4	
Toluene	ND	ug/L	5.0	1		11/28/12 04:07	108-88-3	
1,1,1-Trichloroethane	ND	ug/L	5.0	1		11/28/12 04:07	71-55-6	
Trichloroethene	ND	ug/L	5.0	1		11/28/12 04:07	79-01-6	
Vinyl chloride	<b>436</b>	ug/L	20.0	10		11/28/12 04:39	75-01-4	
Xylene (Total)	ND	ug/L	10.0	1		11/28/12 04:07	1330-20-7	
<b>Surrogates</b>								
Dibromofluoromethane (S)	98 %.		83-123	1		11/28/12 04:07	1868-53-7	
4-Bromofluorobenzene (S)	96 %.		72-125	1		11/28/12 04:07	460-00-4	
Toluene-d8 (S)	98 %.		81-114	1		11/28/12 04:07	2037-26-5	
<b>5310C TOC</b>	Analytical Method: SM 5310C							
Total Organic Carbon	<b>4.2</b>	mg/L	0.30	1		11/17/12 17:58	7440-44-0	N2
<b>ASTM D516-9002 Sulfate Water</b>	Analytical Method: ASTM D516-90,02							
Sulfate	<b>36.3</b>	mg/L	5.0	1		11/16/12 16:43	14808-79-8	N2
<b>353.2 Nitrogen, NO<sub>2</sub>/NO<sub>3</sub> unpres</b>	Analytical Method: EPA 353.2							
Nitrogen, Nitrate	ND	mg/L	0.10	1		11/16/12 08:18		
Nitrogen, Nitrite	ND	mg/L	0.10	1		11/16/12 08:18		

## ANALYTICAL RESULTS

Project: MI Plaza M01046

Pace Project No.: 5072339

Sample: MMW-P-07	Lab ID: 5072339020	Collected: 11/14/12 13:47	Received: 11/15/12 10:50	Matrix: Water				
Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
<b>8260 MSV</b>	Analytical Method: EPA 8260							
Benzene	ND	ug/L	5.0	1		11/28/12 05:11	71-43-2	
Carbon tetrachloride	ND	ug/L	5.0	1		11/28/12 05:11	56-23-5	
Chloroform	ND	ug/L	5.0	1		11/28/12 05:11	67-66-3	
1,1-Dichloroethene	ND	ug/L	5.0	1		11/28/12 05:11	75-35-4	
cis-1,2-Dichloroethene	<b>42.2</b>	ug/L	5.0	1		11/28/12 05:11	156-59-2	
trans-1,2-Dichloroethene	ND	ug/L	5.0	1		11/28/12 05:11	156-60-5	
Ethylbenzene	ND	ug/L	5.0	1		11/28/12 05:11	100-41-4	
Methylene Chloride	<b>5.1</b>	ug/L	5.0	1		11/28/12 05:11	75-09-2	
Naphthalene	ND	ug/L	5.0	1		11/28/12 05:11	91-20-3	
Tetrachloroethene	ND	ug/L	5.0	1		11/28/12 05:11	127-18-4	
Toluene	ND	ug/L	5.0	1		11/28/12 05:11	108-88-3	
1,1,1-Trichloroethane	ND	ug/L	5.0	1		11/28/12 05:11	71-55-6	
Trichloroethene	ND	ug/L	5.0	1		11/28/12 05:11	79-01-6	
Vinyl chloride	<b>607</b>	ug/L	20.0	10		11/28/12 05:44	75-01-4	
Xylene (Total)	ND	ug/L	10.0	1		11/28/12 05:11	1330-20-7	
<b>Surrogates</b>								
Dibromofluoromethane (S)	98 %.		83-123	1		11/28/12 05:11	1868-53-7	
4-Bromofluorobenzene (S)	98 %.		72-125	1		11/28/12 05:11	460-00-4	
Toluene-d8 (S)	97 %.		81-114	1		11/28/12 05:11	2037-26-5	
<b>5310C TOC</b>	Analytical Method: SM 5310C							
Total Organic Carbon	<b>4.0</b>	mg/L	0.30	1		11/17/12 18:31	7440-44-0	N2
<b>ASTM D516-9002 Sulfate Water</b>	Analytical Method: ASTM D516-90,02							
Sulfate	<b>81.0</b>	mg/L	12.5	1		11/16/12 16:43	14808-79-8	N2
<b>353.2 Nitrogen, NO<sub>2</sub>/NO<sub>3</sub> unpres</b>	Analytical Method: EPA 353.2							
Nitrogen, Nitrate	ND	mg/L	0.10	1		11/16/12 08:19		
Nitrogen, Nitrite	ND	mg/L	0.10	1		11/16/12 08:19		

## ANALYTICAL RESULTS

Project: MI Plaza M01046

Pace Project No.: 5072339

Sample: MMW-P-01	Lab ID: 5072339021	Collected: 11/14/12 14:21	Received: 11/15/12 10:50	Matrix: Water				
Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
<b>8260 MSV</b>	Analytical Method: EPA 8260							
Benzene	ND	ug/L	5.0	1		11/28/12 06:16	71-43-2	
Carbon tetrachloride	ND	ug/L	5.0	1		11/28/12 06:16	56-23-5	
Chloroform	ND	ug/L	5.0	1		11/28/12 06:16	67-66-3	
1,1-Dichloroethene	ND	ug/L	5.0	1		11/28/12 06:16	75-35-4	
cis-1,2-Dichloroethene	<b>619</b>	ug/L	50.0	10		11/28/12 06:49	156-59-2	
trans-1,2-Dichloroethene	<b>14.1</b>	ug/L	5.0	1		11/28/12 06:16	156-60-5	
Ethylbenzene	ND	ug/L	5.0	1		11/28/12 06:16	100-41-4	
Methylene Chloride	ND	ug/L	5.0	1		11/28/12 06:16	75-09-2	
Naphthalene	ND	ug/L	5.0	1		11/28/12 06:16	91-20-3	
Tetrachloroethene	<b>24.5</b>	ug/L	5.0	1		11/28/12 06:16	127-18-4	
Toluene	ND	ug/L	5.0	1		11/28/12 06:16	108-88-3	
1,1,1-Trichloroethane	ND	ug/L	5.0	1		11/28/12 06:16	71-55-6	
Trichloroethene	<b>13.1</b>	ug/L	5.0	1		11/28/12 06:16	79-01-6	
Vinyl chloride	<b>3060</b>	ug/L	200	100		11/28/12 22:06	75-01-4	
Xylene (Total)	ND	ug/L	10.0	1		11/28/12 06:16	1330-20-7	
<b>Surrogates</b>								
Dibromofluoromethane (S)	97 %.		83-123	1		11/28/12 06:16	1868-53-7	
4-Bromofluorobenzene (S)	97 %.		72-125	1		11/28/12 06:16	460-00-4	
Toluene-d8 (S)	98 %.		81-114	1		11/28/12 06:16	2037-26-5	
<b>5310C TOC</b>	Analytical Method: SM 5310C							
Total Organic Carbon	<b>3.2</b>	mg/L	0.30	1		11/17/12 19:03	7440-44-0	N2
<b>ASTM D516-9002 Sulfate Water</b>	Analytical Method: ASTM D516-90,02							
Sulfate	<b>106</b>	mg/L	25.0	1		11/16/12 16:43	14808-79-8	N2
<b>353.2 Nitrogen, NO<sub>2</sub>/NO<sub>3</sub> unpres</b>	Analytical Method: EPA 353.2							
Nitrogen, Nitrate	ND	mg/L	0.10	1		11/16/12 08:29		
Nitrogen, Nitrite	ND	mg/L	0.10	1		11/16/12 08:29		

## ANALYTICAL RESULTS

Project: MI Plaza M01046

Pace Project No.: 5072339

Sample: MMW-P-06	Lab ID: 5072339022	Collected: 11/14/12 14:55	Received: 11/15/12 10:50	Matrix: Water				
Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
<b>8260 MSV</b>	Analytical Method: EPA 8260							
Benzene	ND	ug/L	50.0	10		11/28/12 07:21	71-43-2	1d,D4
Carbon tetrachloride	ND	ug/L	50.0	10		11/28/12 07:21	56-23-5	
Chloroform	ND	ug/L	50.0	10		11/28/12 07:21	67-66-3	
1,1-Dichloroethene	ND	ug/L	50.0	10		11/28/12 07:21	75-35-4	
cis-1,2-Dichloroethene	<b>4640</b>	ug/L	500	100		11/28/12 07:54	156-59-2	
trans-1,2-Dichloroethene	ND	ug/L	50.0	10		11/28/12 07:21	156-60-5	
Ethylbenzene	ND	ug/L	50.0	10		11/28/12 07:21	100-41-4	
Methylene Chloride	ND	ug/L	50.0	10		11/28/12 07:21	75-09-2	
Naphthalene	ND	ug/L	50.0	10		11/28/12 07:21	91-20-3	
Tetrachloroethene	ND	ug/L	50.0	10		11/28/12 07:21	127-18-4	
Toluene	ND	ug/L	50.0	10		11/28/12 07:21	108-88-3	
1,1,1-Trichloroethane	ND	ug/L	50.0	10		11/28/12 07:21	71-55-6	
Trichloroethene	ND	ug/L	50.0	10		11/28/12 07:21	79-01-6	
Vinyl chloride	<b>6170</b>	ug/L	200	100		11/28/12 07:54	75-01-4	
Xylene (Total)	ND	ug/L	100	10		11/28/12 07:21	1330-20-7	
<b>Surrogates</b>								
Dibromofluoromethane (S)	97 %.		83-123	10		11/28/12 07:21	1868-53-7	
4-Bromofluorobenzene (S)	99 %.		72-125	10		11/28/12 07:21	460-00-4	
Toluene-d8 (S)	98 %.		81-114	10		11/28/12 07:21	2037-26-5	
<b>5310C TOC</b>	Analytical Method: SM 5310C							
Total Organic Carbon	<b>2.3</b>	mg/L	0.30	1		11/17/12 19:26	7440-44-0	N2
<b>ASTM D516-9002 Sulfate Water</b>	Analytical Method: ASTM D516-90,02							
Sulfate	<b>82.5</b>	mg/L	25.0	1		11/16/12 16:43	14808-79-8	N2
<b>353.2 Nitrogen, NO<sub>2</sub>/NO<sub>3</sub> unpres</b>	Analytical Method: EPA 353.2							
Nitrogen, Nitrate	ND	mg/L	0.10	1		11/16/12 08:32		
Nitrogen, Nitrite	ND	mg/L	0.10	1		11/16/12 08:32		

## ANALYTICAL RESULTS

Project: MI Plaza M01046

Pace Project No.: 5072339

Sample: MMW-9S	Lab ID: 5072339023	Collected: 11/14/12 15:36	Received: 11/15/12 10:50	Matrix: Water				
Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
<b>8260 MSV</b>	Analytical Method: EPA 8260							
Benzene	ND	ug/L	5.0	1		11/28/12 08:27	71-43-2	
Carbon tetrachloride	ND	ug/L	5.0	1		11/28/12 08:27	56-23-5	
Chloroform	ND	ug/L	5.0	1		11/28/12 08:27	67-66-3	
1,1-Dichloroethene	ND	ug/L	5.0	1		11/28/12 08:27	75-35-4	
cis-1,2-Dichloroethene	<b>2000</b>	ug/L	50.0	10		11/28/12 10:04	156-59-2	
trans-1,2-Dichloroethene	<b>58.0</b>	ug/L	5.0	1		11/28/12 08:27	156-60-5	
Ethylbenzene	ND	ug/L	5.0	1		11/28/12 08:27	100-41-4	
Methylene Chloride	ND	ug/L	5.0	1		11/28/12 08:27	75-09-2	
Naphthalene	ND	ug/L	5.0	1		11/28/12 08:27	91-20-3	
Tetrachloroethene	<b>9.8</b>	ug/L	5.0	1		11/28/12 08:27	127-18-4	
Toluene	ND	ug/L	5.0	1		11/28/12 08:27	108-88-3	
1,1,1-Trichloroethane	ND	ug/L	5.0	1		11/28/12 08:27	71-55-6	
Trichloroethene	<b>5.0</b>	ug/L	5.0	1		11/28/12 08:27	79-01-6	
Vinyl chloride	<b>893</b>	ug/L	20.0	10		11/28/12 10:04	75-01-4	
Xylene (Total)	ND	ug/L	10.0	1		11/28/12 08:27	1330-20-7	
<b>Surrogates</b>								
Dibromofluoromethane (S)	95 %.		83-123	1		11/28/12 08:27	1868-53-7	
4-Bromofluorobenzene (S)	98 %.		72-125	1		11/28/12 08:27	460-00-4	
Toluene-d8 (S)	98 %.		81-114	1		11/28/12 08:27	2037-26-5	
<b>5310C TOC</b>	Analytical Method: SM 5310C							
Total Organic Carbon	<b>4.7</b>	mg/L	0.30	1		11/17/12 10:03	7440-44-0	N2
<b>ASTM D516-9002 Sulfate Water</b>	Analytical Method: ASTM D516-90,02							
Sulfate	<b>62.5</b>	mg/L	62.5	1		11/16/12 16:43	14808-79-8	N2
<b>353.2 Nitrogen, NO<sub>2</sub>/NO<sub>3</sub> unpres</b>	Analytical Method: EPA 353.2							
Nitrogen, Nitrate	ND	mg/L	0.10	1		11/16/12 08:39		
Nitrogen, Nitrite	ND	mg/L	0.10	1		11/16/12 08:39		



Pace Analytical Services, Inc.

1233 Dublin Road  
Columbus, OH 43215  
(614)486-5421

Pace Analytical Services, Inc.

7726 Moller Road  
dianapolis, IN 46268  
(317)875-5894

## **QUALITY CONTROL DATA**

Project: MI Plaza M01046

Pace Project No.: 5072339

QC Batch: MSV/48010 Analysis Method: EPA 8260  
QC Batch Method: EPA 8260 Analysis Description: 8260 MSV  
Associated Lab Samples: 5072339002, 5072339003, 5072339004, 5072339006, 5072339009, 5072339010

METHOD BLANK: 834634 Matrix: Water

**Associated Lab Samples:** 5072339002, 5072339003, 5072339004, 5072339006, 5072339009, 5072339010

Parameter	Units	Blank	Reporting	Analyzed	Qualifiers
		Result	Limit		
1,1,1-Trichloroethane	ug/L	ND	5.0	11/21/12 13:28	
1,1-Dichloroethene	ug/L	ND	5.0	11/21/12 13:28	
Benzene	ug/L	ND	5.0	11/21/12 13:28	
Carbon tetrachloride	ug/L	ND	5.0	11/21/12 13:28	
Chloroform	ug/L	ND	5.0	11/21/12 13:28	
cis-1,2-Dichloroethene	ug/L	ND	5.0	11/21/12 13:28	
Ethylbenzene	ug/L	ND	5.0	11/21/12 13:28	
Methylene Chloride	ug/L	ND	5.0	11/21/12 13:28	
Naphthalene	ug/L	ND	5.0	11/21/12 13:28	
Tetrachloroethene	ug/L	ND	5.0	11/21/12 13:28	
Toluene	ug/L	ND	5.0	11/21/12 13:28	
trans-1,2-Dichloroethene	ug/L	ND	5.0	11/21/12 13:28	
Trichloroethene	ug/L	ND	5.0	11/21/12 13:28	
Vinyl chloride	ug/L	ND	2.0	11/21/12 13:28	
Xylene (Total)	ug/L	ND	10.0	11/21/12 13:28	
4-Bromofluorobenzene (S)	%.	103	72-125	11/21/12 13:28	
Dibromofluoromethane (S)	%.	102	83-123	11/21/12 13:28	
Toluene-d8 (S)	%.	96	81-114	11/21/12 13:28	

---

LABORATORY CONTROL SAMPLE: 834635

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
1,1,1-Trichloroethane	ug/L	50	53.7	107	69-126	
1,1-Dichloroethene	ug/L	50	46.9	94	75-145	
Benzene	ug/L	50	47.8	96	76-123	
Carbon tetrachloride	ug/L	50	50.2	100	65-125	
Chloroform	ug/L	50	52.8	106	73-122	
cis-1,2-Dichloroethene	ug/L	50	55.8	112	79-129	
Ethylbenzene	ug/L	50	49.0	98	75-120	
Methylene Chloride	ug/L	50	54.8	110	61-138	
Naphthalene	ug/L	50	54.3	109	62-130	
Tetrachloroethene	ug/L	50	50.8	102	57-125	
Toluene	ug/L	50	46.1	92	72-124	
trans-1,2-Dichloroethene	ug/L	50	55.4	111	71-145	
Trichloroethene	ug/L	50	55.2	110	77-122	
Vinyl chloride	ug/L	50	50.6	101	61-146	
Xylene (Total)	ug/L	150	146	97	72-126	
4-Bromofluorobenzene (S)	%.			103	72-125	
Dibromofluoromethane (S)	%.			102	83-123	
Toluene-d8 (S)	%.			94	81-114	

Date: 12/03/2012 11:04 AM

## **REPORT OF LABORATORY ANALYSIS**

Page 29 of 39

This report shall not be reproduced, except in full,  
without the written consent of Pace Analytical Services, Inc.

## QUALITY CONTROL DATA

Project: MI Plaza M01046

Pace Project No.: 5072339

QC Batch:	MSV/48074	Analysis Method:	EPA 8260
QC Batch Method:	EPA 8260	Analysis Description:	8260 MSV
Associated Lab Samples:	5072339001, 5072339005, 5072339007, 5072339008, 5072339011, 5072339013, 5072339014, 5072339016, 5072339017		

METHOD BLANK: 835637                          Matrix: Water

Associated Lab Samples: 5072339001, 5072339005, 5072339007, 5072339008, 5072339011, 5072339013, 5072339014, 5072339016, 5072339017

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
1,1,1-Trichloroethane	ug/L	ND	5.0	11/27/12 12:07	
1,1-Dichloroethene	ug/L	ND	5.0	11/27/12 12:07	
Benzene	ug/L	ND	5.0	11/27/12 12:07	
Carbon tetrachloride	ug/L	ND	5.0	11/27/12 12:07	
Chloroform	ug/L	ND	5.0	11/27/12 12:07	
cis-1,2-Dichloroethene	ug/L	ND	5.0	11/27/12 12:07	
Ethylbenzene	ug/L	ND	5.0	11/27/12 12:07	
Methylene Chloride	ug/L	ND	5.0	11/27/12 12:07	
Naphthalene	ug/L	ND	5.0	11/27/12 12:07	
Tetrachloroethene	ug/L	ND	5.0	11/27/12 12:07	
Toluene	ug/L	ND	5.0	11/27/12 12:07	
trans-1,2-Dichloroethene	ug/L	ND	5.0	11/27/12 12:07	
Trichloroethene	ug/L	ND	5.0	11/27/12 12:07	
Vinyl chloride	ug/L	ND	2.0	11/27/12 12:07	
Xylene (Total)	ug/L	ND	10.0	11/27/12 12:07	
4-Bromofluorobenzene (S)	%.	99	72-125	11/27/12 12:07	
Dibromofluoromethane (S)	%.	99	83-123	11/27/12 12:07	
Toluene-d8 (S)	%.	100	81-114	11/27/12 12:07	

LABORATORY CONTROL SAMPLE: 835638

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
1,1,1-Trichloroethane	ug/L	50	44.9	90	69-126	
1,1-Dichloroethene	ug/L	50	44.9	90	75-145	
Benzene	ug/L	50	47.1	94	76-123	
Carbon tetrachloride	ug/L	50	39.6	79	65-125	
Chloroform	ug/L	50	46.1	92	73-122	
cis-1,2-Dichloroethene	ug/L	50	44.3	89	79-129	
Ethylbenzene	ug/L	50	45.1	90	75-120	
Methylene Chloride	ug/L	50	46.5	93	61-138	
Naphthalene	ug/L	50	46.7	93	62-130	
Tetrachloroethene	ug/L	50	44.2	88	57-125	
Toluene	ug/L	50	46.6	93	72-124	
trans-1,2-Dichloroethene	ug/L	50	43.2	86	71-145	
Trichloroethene	ug/L	50	43.3	87	77-122	
Vinyl chloride	ug/L	50	45.7	91	61-146	
Xylene (Total)	ug/L	150	131	88	72-126	
4-Bromofluorobenzene (S)	%.			96	72-125	
Dibromofluoromethane (S)	%.			103	83-123	
Toluene-d8 (S)	%.			97	81-114	

Date: 12/03/2012 11:04 AM

## REPORT OF LABORATORY ANALYSIS

Page 30 of 39

This report shall not be reproduced, except in full,  
without the written consent of Pace Analytical Services, Inc..



Pace Analytical Services, Inc.

1233 Dublin Road  
Columbus, OH 43215  
(614)486-5421

Pace Analytical Services, Inc.

7726 Moller Road  
dianapolis, IN 46268  
(317)875-5894

## **QUALITY CONTROL DATA**

Project: MI Plaza M01046

Pace Project No.: 5072339

QC Batch: MSV/48100

Analysis Method: EPA 8260

QC Batch Method: EPA 8260

Analysis Description: 8260 MSV

**Associated Lab Samples:** 5072339012, 5072339015, 5072339018, 5072339019, 5072339020, 5072339021, 5072339022, 5072339023

---

METHOD BLANK: 835898

## Matrix: Water

Associated Lab Samples: 5072339012, 5072339015, 5072339018, 5072339019, 5072339020, 5072339021, 5072339022, 5072339023

Parameter	Units	Blank	Reporting	Analyzed	Qualifiers
		Result	Limit		
1,1,1-Trichloroethane	ug/L	ND	5.0	11/28/12 00:52	
1,1-Dichloroethene	ug/L	ND	5.0	11/28/12 00:52	
Benzene	ug/L	ND	5.0	11/28/12 00:52	
Carbon tetrachloride	ug/L	ND	5.0	11/28/12 00:52	
Chloroform	ug/L	ND	5.0	11/28/12 00:52	
cis-1,2-Dichloroethene	ug/L	ND	5.0	11/28/12 00:52	
Ethylbenzene	ug/L	ND	5.0	11/28/12 00:52	
Methylene Chloride	ug/L	ND	5.0	11/28/12 00:52	
Naphthalene	ug/L	ND	5.0	11/28/12 00:52	
Tetrachloroethene	ug/L	ND	5.0	11/28/12 00:52	
Toluene	ug/L	ND	5.0	11/28/12 00:52	
trans-1,2-Dichloroethene	ug/L	ND	5.0	11/28/12 00:52	
Trichloroethene	ug/L	ND	5.0	11/28/12 00:52	
Vinyl chloride	ug/L	ND	2.0	11/28/12 00:52	
Xylene (Total)	ug/L	ND	10.0	11/28/12 00:52	
4-Bromofluorobenzene (S)	%.	98	72-125	11/28/12 00:52	
Dibromofluoromethane (S)	%.	98	83-123	11/28/12 00:52	
Toluene-d8 (S)	%.	99	81-114	11/28/12 00:52	

---

LABORATORY CONTROL SAMPLE: 835899

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
1,1,1-Trichloroethane	ug/L	50	46.9	94	69-126	
1,1-Dichloroethene	ug/L	50	52.8	106	75-145	
Benzene	ug/L	50	52.4	105	76-123	
Carbon tetrachloride	ug/L	50	41.2	82	65-125	
Chloroform	ug/L	50	53.7	107	73-122	
cis-1,2-Dichloroethene	ug/L	50	51.6	103	79-129	
Ethylbenzene	ug/L	50	51.9	104	75-120	
Methylene Chloride	ug/L	50	48.5	97	61-138	
Naphthalene	ug/L	50	48.1	96	62-130	
Tetrachloroethene	ug/L	50	50.6	101	57-125	
Toluene	ug/L	50	50.6	101	72-124	
trans-1,2-Dichloroethene	ug/L	50	47.4	95	71-145	
Trichloroethene	ug/L	50	49.0	98	77-122	
Vinyl chloride	ug/L	50	59.7	119	61-146	
Xylene (Total)	ug/L	150	153	102	72-126	
4-Bromofluorobenzene (S)	%.			103	72-125	
Dibromofluoromethane (S)	%.			102	83-123	
Toluene-d8 (S)	%.			98	81-114	

Date: 12/03/2012 11:04 AM

## **REPORT OF LABORATORY ANALYSIS**

Page 31 of 39

This report shall not be reproduced, except in full,  
without the written consent of Pace Analytical Services, Inc.

## QUALITY CONTROL DATA

Project: MI Plaza M01046

Pace Project No.: 5072339

Parameter	Units	5072339023		MS		MSD		MS Result	% Rec	MSD Result	% Rec	% Rec	Max	
		Result	Conc.	Spike	Conc.	MS	MSD						RPD	RPD
1,1,1-Trichloroethane	ug/L	ND	50	50	45.3	44.0	91	88	37-136	3	20			
1,1-Dichloroethene	ug/L	ND	50	50	51.4	48.5	103	97	54-152	6	20			
Benzene	ug/L	ND	50	50	51.6	48.9	103	98	52-134	5	20			
Carbon tetrachloride	ug/L	ND	50	50	38.9	40.1	78	80	26-136	3	20			
Chloroform	ug/L	ND	50	50	56.0	53.2	112	106	50-134	5	20			
cis-1,2-Dichloroethene	ug/L	2000	50	50	1940	1810	-121	-371	48-145	7	20	M0		
Ethylbenzene	ug/L	ND	50	50	52.3	49.2	105	98	29-132	6	20			
Methylene Chloride	ug/L	ND	50	50	56.2	54.3	108	104	47-141	3	20			
Naphthalene	ug/L	ND	50	50	47.6	44.8	95	90	40-124	6	20			
Tetrachloroethene	ug/L	9.8	50	50	59.8	56.6	100	93	30-124	6	20			
Toluene	ug/L	ND	50	50	51.3	47.8	103	96	42-130	7	20			
trans-1,2-Dichloroethene	ug/L	58.0	50	50	98.5	92.9	81	70	48-144	6	20			
Trichloroethene	ug/L	5.0	50	50	52.5	50.1	95	90	44-130	5	20			
Vinyl chloride	ug/L	893	50	50	810	764	-166	-259	45-159	6	20	M0		
Xylene (Total)	ug/L	ND	150	150	151	144	101	96	29-131	5	20			
4-Bromofluorobenzene (S)	%.						105	105	72-125		20			
Dibromofluoromethane (S)	%.						101	103	83-123		20			
Toluene-d8 (S)	%.						99	98	81-114		20			

## QUALITY CONTROL DATA

Project: MI Plaza M01046

Pace Project No.: 5072339

QC Batch:	OHIO/5134	Analysis Method:	SM 5310C
QC Batch Method:	SM 5310C	Analysis Description:	5310C TOC
Associated Lab Samples: 5072339012, 5072339013, 5072339014, 5072339015, 5072339016, 5072339017, 5072339018, 5072339019, 5072339020, 5072339021, 5072339022, 5072339023			

METHOD BLANK:	832582	Matrix:	Water		
Associated Lab Samples: 5072339012, 5072339013, 5072339014, 5072339015, 5072339016, 5072339017, 5072339018, 5072339019, 5072339020, 5072339021, 5072339022, 5072339023					
Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
Total Organic Carbon	mg/L	ND	0.30	11/17/12 09:09	N2

LABORATORY CONTROL SAMPLE:	832583	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Parameter	Units	5	5.0	100	80-120	N2
Total Organic Carbon	mg/L					

MATRIX SPIKE & MATRIX SPIKE DUPLICATE:	832585	832586										
Parameter	Units	5072339023	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	Max RPD	RPD	Qual
Total Organic Carbon	mg/L	4.7	4	4	8.9	8.8	104	102	75-125	.5	20	N2

SAMPLE DUPLICATE:	832584	5072339023										
Parameter	Units	Result		Dup Result	RPD	Max RPD		Qualifiers				
Total Organic Carbon	mg/L	4.7	4.7	4.7	2	20	20	N2				

## QUALITY CONTROL DATA

Project: MI Plaza M01046

Pace Project No.: 5072339

QC Batch:	WET/10487	Analysis Method:	ASTM D516-90,02
QC Batch Method:	ASTM D516-90,02	Analysis Description:	ASTM D516-9002 Sulfate Water
Associated Lab Samples:	5072339012, 5072339013, 5072339014, 5072339015, 5072339016, 5072339017, 5072339018, 5072339019, 5072339020, 5072339021, 5072339022, 5072339023		

METHOD BLANK: 832398 Matrix: Water

Associated Lab Samples: 5072339012, 5072339013, 5072339014, 5072339015, 5072339016, 5072339017, 5072339018, 5072339019, 5072339020, 5072339021, 5072339022, 5072339023

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
Sulfate	mg/L	ND	5.0	11/16/12 16:43	N2

LABORATORY CONTROL SAMPLE: 832399

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Sulfate	mg/L	20	19.9	100	90-110	N2

MATRIX SPIKE &amp; MATRIX SPIKE DUPLICATE: 832639 832640

Parameter	Units	5072339023 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	Max RPD	RPD	Qual
Sulfate	mg/L	62.5	250	250	320	330	103	107	90-110	3	20	N2

MATRIX SPIKE SAMPLE: 832641

Parameter	Units	5072122001 Result	Spike Conc.	MS Result	MS % Rec	% Rec Limits	Qualifiers
Sulfate	mg/L	94.5	100	179	84	90-110	M0,N2

## QUALITY CONTROL DATA

Project: MI Plaza M01046

Pace Project No.: 5072339

QC Batch:	WETA/8849	Analysis Method:	EPA 353.2
QC Batch Method:	EPA 353.2	Analysis Description:	353.2 Nitrate + Nitrite, Unpres.
Associated Lab Samples:	5072339012, 5072339013, 5072339014, 5072339015, 5072339016, 5072339017, 5072339018, 5072339019, 5072339020		

METHOD BLANK: 831775                          Matrix: Water

Associated Lab Samples: 5072339012, 5072339013, 5072339014, 5072339015, 5072339016, 5072339017, 5072339018, 5072339019, 5072339020

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
Nitrogen, Nitrate	mg/L	ND	0.10	11/16/12 07:56	
Nitrogen, Nitrite	mg/L	ND	0.10	11/16/12 07:56	

LABORATORY CONTROL SAMPLE: 831776

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Nitrogen, Nitrate	mg/L	2	2.0	98	90-110	
Nitrogen, Nitrite	mg/L	2	1.9	95	90-110	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 831777                          831778

Parameter	Units	5072308003 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
Nitrogen, Nitrate	mg/L	0.084J	2	2	1.8	1.8	84	84	90-110	.2	20	M3
Nitrogen, Nitrite	mg/L	ND	2	2	1.7	1.7	84	85	90-110	.6	20	M3

MATRIX SPIKE SAMPLE: 831779

Parameter	Units	5072339020 Result	Spike Conc.	MS Result	MS % Rec	% Rec Limits	Qualifiers
Nitrogen, Nitrate	mg/L	ND	2	1.7	82	90-110	M0
Nitrogen, Nitrite	mg/L	ND	2	1.7	83	90-110	M0

## QUALITY CONTROL DATA

Project: MI Plaza M01046

Pace Project No.: 5072339

QC Batch:	WETA/8850	Analysis Method:	EPA 353.2
QC Batch Method:	EPA 353.2	Analysis Description:	353.2 Nitrate + Nitrite, Unpres.
Associated Lab Samples:	5072339021, 5072339022, 5072339023		

METHOD BLANK: 831780   Matrix: Water

Associated Lab Samples: 5072339021, 5072339022, 5072339023

Parameter	Units	Blank Result	Reporting Limit		Analyzed	Qualifiers
			Limit	Analyzed		
Nitrogen, Nitrate	mg/L	ND	0.10	11/16/12 08:25		
Nitrogen, Nitrite	mg/L	ND	0.10	11/16/12 08:25		

LABORATORY CONTROL SAMPLE: 831781

Parameter	Units	Spike Conc.	LCS Result		% Rec Limits	Qualifiers
			LCS % Rec	% Rec		
Nitrogen, Nitrate	mg/L	2	1.9	97	90-110	
Nitrogen, Nitrite	mg/L	2	1.9	95	90-110	

MATRIX SPIKE SAMPLE: 831782

Parameter	Units	5072308006 Result	Spike Conc.	MS Result		% Rec Limits	Qualifiers
				MS % Rec	% Rec		
Nitrogen, Nitrate	mg/L	ND	2	2.0	100	90-110	
Nitrogen, Nitrite	mg/L	ND	2	1.8	91	90-110	

MATRIX SPIKE &amp; MATRIX SPIKE DUPLICATE: 831783   831784

Parameter	Units	5072339023 Result	MS Spike Conc.	MSD Spike Conc.	MS Result		MS % Rec	MSD % Rec	% Rec Limits	RPD	RPD	Max Qual
					MS % Rec	MSD % Rec						
Nitrogen, Nitrate	mg/L	ND	2	2	1.6	1.7	80	81	90-110	1	20	M3
Nitrogen, Nitrite	mg/L	ND	2	2	1.6	1.6	78	78	90-110	.1	20	M3

## QUALIFIERS

Project: MI Plaza M01046

Pace Project No.: 5072339

---

### DEFINITIONS

DF - Dilution Factor, if reported, represents the factor applied to the reported data due to changes in sample preparation, dilution of the sample aliquot, or moisture content.

ND - Not Detected at or above adjusted reporting limit.

J - Estimated concentration above the adjusted method detection limit and below the adjusted reporting limit.

MDL - Adjusted Method Detection Limit.

PRL - Pace Reporting Limit.

RL - Reporting Limit.

S - Surrogate

1,2-Diphenylhydrazine (8270 listed analyte) decomposes to Azobenzene.

Consistent with EPA guidelines, unrounded data are displayed and have been used to calculate % recovery and RPD values.

LCS(D) - Laboratory Control Sample (Duplicate)

MS(D) - Matrix Spike (Duplicate)

DUP - Sample Duplicate

RPD - Relative Percent Difference

NC - Not Calculable.

SG - Silica Gel - Clean-Up

U - Indicates the compound was analyzed for, but not detected.

N-Nitrosodiphenylamine decomposes and cannot be separated from Diphenylamine using Method 8270. The result reported for each analyte is a combined concentration.

Pace Analytical is TNI accredited. Contact your Pace PM for the current list of accredited analytes.

TNI - The NELAC Institute.

### ANALYTE QUALIFIERS

1d Benzene ND at an estimated RL of 5 ug/L based on the MDL. grm 11-28-12

D4 Sample was diluted due to the presence of high levels of target analytes.

M0 Matrix spike recovery and/or matrix spike duplicate recovery was outside laboratory control limits.

M3 Matrix spike recovery was outside laboratory control limits due to matrix interferences.

N2 The lab does not hold TNI accreditation for this parameter.

**QUALITY CONTROL DATA CROSS REFERENCE TABLE**

Project: MI Plaza M01046  
Pace Project No.: 5072339

Lab ID	Sample ID	QC Batch Method	QC Batch	Analytical Method	Analytical Batch
5072339001	MMW-6D	EPA 8260	MSV/48074		
5072339002	MMW-4D	EPA 8260	MSV/48010		
5072339003	MMW-13D	EPA 8260	MSV/48010		
5072339004	MMW-11D	EPA 8260	MSV/48010		
5072339005	MMW-11S	EPA 8260	MSV/48074		
5072339006	MMW-12S	EPA 8260	MSV/48010		
5072339007	MMW-14D	EPA 8260	MSV/48074		
5072339008	MMW-P-9S	EPA 8260	MSV/48074		
5072339009	MMW-P-9D	EPA 8260	MSV/48010		
5072339010	MMW-C-02S	EPA 8260	MSV/48010		
5072339011	Trip Blank	EPA 8260	MSV/48074		
5072339012	MMW-P-03S	EPA 8260	MSV/48100		
5072339013	MMW-P-03D	EPA 8260	MSV/48074		
5072339014	Dup 1	EPA 8260	MSV/48074		
5072339015	MMW-P-02	EPA 8260	MSV/48100		
5072339016	MMW-P-05	EPA 8260	MSV/48074		
5072339017	MMW-P-10S	EPA 8260	MSV/48074		
5072339018	MMW-P-10D	EPA 8260	MSV/48100		
5072339019	MMW-P-08	EPA 8260	MSV/48100		
5072339020	MMW-P-07	EPA 8260	MSV/48100		
5072339021	MMW-P-01	EPA 8260	MSV/48100		
5072339022	MMW-P-06	EPA 8260	MSV/48100		
5072339023	MMW-9S	EPA 8260	MSV/48100		
5072339012	MMW-P-03S	SM 5310C	OHIO/5134		
5072339013	MMW-P-03D	SM 5310C	OHIO/5134		
5072339014	Dup 1	SM 5310C	OHIO/5134		
5072339015	MMW-P-02	SM 5310C	OHIO/5134		
5072339016	MMW-P-05	SM 5310C	OHIO/5134		
5072339017	MMW-P-10S	SM 5310C	OHIO/5134		
5072339018	MMW-P-10D	SM 5310C	OHIO/5134		
5072339019	MMW-P-08	SM 5310C	OHIO/5134		
5072339020	MMW-P-07	SM 5310C	OHIO/5134		
5072339021	MMW-P-01	SM 5310C	OHIO/5134		
5072339022	MMW-P-06	SM 5310C	OHIO/5134		
5072339023	MMW-9S	SM 5310C	OHIO/5134		
5072339012	MMW-P-03S	ASTM D516-90,02	WET/10487		
5072339013	MMW-P-03D	ASTM D516-90,02	WET/10487		
5072339014	Dup 1	ASTM D516-90,02	WET/10487		
5072339015	MMW-P-02	ASTM D516-90,02	WET/10487		
5072339016	MMW-P-05	ASTM D516-90,02	WET/10487		
5072339017	MMW-P-10S	ASTM D516-90,02	WET/10487		
5072339018	MMW-P-10D	ASTM D516-90,02	WET/10487		

**QUALITY CONTROL DATA CROSS REFERENCE TABLE**

Project: MI Plaza M01046  
Pace Project No.: 5072339

Lab ID	Sample ID	QC Batch Method	QC Batch	Analytical Method	Analytical Batch
5072339019	MMW-P-08	ASTM D516-90,02	WET/10487		
5072339020	MMW-P-07	ASTM D516-90,02	WET/10487		
5072339021	MMW-P-01	ASTM D516-90,02	WET/10487		
5072339022	MMW-P-06	ASTM D516-90,02	WET/10487		
5072339023	MMW-9S	ASTM D516-90,02	WET/10487		
5072339012	MMW-P-03S	EPA 353.2	WETA/8849		
5072339013	MMW-P-03D	EPA 353.2	WETA/8849		
5072339014	Dup 1	EPA 353.2	WETA/8849		
5072339015	MMW-P-02	EPA 353.2	WETA/8849		
5072339016	MMW-P-05	EPA 353.2	WETA/8849		
5072339017	MMW-P-10S	EPA 353.2	WETA/8849		
5072339018	MMW-P-10D	EPA 353.2	WETA/8849		
5072339019	MMW-P-08	EPA 353.2	WETA/8849		
5072339020	MMW-P-07	EPA 353.2	WETA/8849		
5072339021	MMW-P-01	EPA 353.2	WETA/8850		
5072339022	MMW-P-06	EPA 353.2	WETA/8850		
5072339023	MMW-9S	EPA 353.2	WETA/8850		



Pace Analytical  
[www.paceanalytical.com](http://www.paceanalytical.com)

The Chain-of-Custody is a LEGAL DOCUMENT. All relevant fields must be completed accurately.

*Pace Analytical*<sup>®</sup>  
[www.pacelabs.com](http://www.pacelabs.com)

**CHAIN-OF-CUSTODY / Analytical Request Document**

The Chain-of-Custody is a LEGAL DOCUMENT. All relevant fields must be completed accurately.

SAMPLER NAME AND SIGNATURE	PRINT Name of SAMPLER: <u>A. J. Damney, C.S.</u>	
SIGNATURE of SAMPLER: <u>A. J. Damney, C.S.</u>	DATE Signed: <u>11-14-12</u>	
Temp In °C Received on 100 (Y/N) <u>                        </u>		
Custody Sealed Container (Y/N) <u>                        </u>		
Samples intact (Y/N) <u>                        </u>		

F-ALL-Q-020rev.07, 15-May-2007

**\*Important Note:** By signing this form you are accepting Pace's NET 30 day payment terms and agreeing to late charges of .5% per month for any invoices not paid within 30 days.

## Sample Condition Upon Receipt

*Pace Analytical*Client Name: Mundell + Assoc. Project # 5072339

Courier:  FedEx  UPS  USPS  Client  Commercial  Pace Other  
 Tracking #: \_\_\_\_\_

Custody Seal on Cooler/Box Present:  yes  no Seals intact:  yes  no  
 Date/Time 5035A kits placed in freezer \_\_\_\_\_

Packing Material:  Bubble Wrap  Bubble Bags  None  Other brown

Thermometer Used 1 2 3 4 6 A B C D E Type of Ice: Wet Blue None  Samples on ice, cooling process has begun

Cooler Temperature 1.30°C Ice Visible in Sample Containers:  yes  no  
 Date and Initials of person examining contents: Kee 11-15-12  
 (Corrected, if applicable)

Temp should be above freezing to 6°C Comments: \_\_\_\_\_

Chain of Custody Present:	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A	1.
Chain of Custody Filled Out:	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A	2.
Chain of Custody Relinquished:	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A	3.
Sampler Name & Signature on COC:	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A	4.
Short Hold Time Analysis (<72hr):	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A	5. <u>Nitrates (pg. 2 of COC)</u>
Rush Turn Around Time Requested:	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No <input type="checkbox"/> N/A	6.
Containers Intact:	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A	7.
Sample Labels match COC: -Includes date/time/ID/Analysis	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No <input type="checkbox"/> N/A	8. <u>Most containers have no dates or times-</u>
All containers needing acid/base pres. have been checked? exceptions: VOA, coliform, TOC, O&G	<input type="checkbox"/> Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> N/A	9. (Circle) HNO3 H2SO4 NaOH HCl
All containers needing preservation are found to be in compliance with EPA recommendation.	<input type="checkbox"/> Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> N/A	
Headspace in VOA Vials (>6mm):	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No <input type="checkbox"/> N/A	10.
Trip Blank Present:	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A	11.
Trip Blank Custody Seals Present	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A	

Project Manager Review		
Samples Arrived within Hold Time:	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A	12.
Sufficient Volume:	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A	13.
Correct Containers Used:	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A	14.

Client Notification/ Resolution: Field Data Required? Y / N

Person Contacted: \_\_\_\_\_ Date/Time: \_\_\_\_\_

Comments/ Resolution: \_\_\_\_\_  
 \_\_\_\_\_  
 \_\_\_\_\_  
 \_\_\_\_\_  
 \_\_\_\_\_  
 \_\_\_\_\_  
 \_\_\_\_\_  
 \_\_\_\_\_

Project Manager Review: y. singer Date: 11/15/12

CLIENT: Mundell + Assoc.

Sample Container Count

*Pace Analytical*  
www.paceanalytical.com

COC PAGE 1 of 2  
COC ID# 1320205

Project # 5072339

Sample Line	Item	DG9H	AG1U	WGFU	AGOU	R 4 / 6	BP2N	BP2U	BP2S	BP3N	BP3U	BP3S	AG3S	AG1H	Comments
1	3														
2															
3															
4															
5															
6															
7															
8															
9															
10															
11															
12															

Container Codes

DG9H	40mL HCl amber vial	AGOU	100mL unpreserved amber glass	BP1N	1 liter HNO3 plastic	DG9P	40mL TSP amber vial
AG1U	1liter unpreserved amber glass	AG1H	1 liter HCl amber glass	BP1S	1 liter H2SO4 plastic	DG9S	40mL H2SO4 amber vial
WGFU	4oz clear soil jar	AG1S	1 liter H2SO4 amber glass	BP1U	1 liter unpreserved plastic	DG9T	40mL Na Thio amber vial
R terra core kit		AG1T	1 liter Na Thiosulfate amber gl	BP1Z	1 liter NaOH, Zn, Ac	DG9U	40mL unpreserved amber vial
BP2N	500mL HNO3 plastic	AG2N	500mL HNO3 amber glass	BP2A	500mL NaOH, Asc Acid plastic	I	Wipe/Swab
BP2U	500mL H2SO4 plastic	AG2S	500mL H2SO4 amber glass	BP2O	500mL NaOH plastic	JGFU	4oz unpreserved amber wide
BP2S	500mL H2SO4 plastic	AG2U	500mL unpreserved amber gla	BP2Z	500mL NaOH, Zn Ac	U	Summa Can
BP3N	250mL HNO3 plastic	AG3U	250mL unpreserved amber gla	AF	Air Filter	VG9H	40mL HCl clear vial
BP3U	250mL unpreserved plastic	BG1H	1 liter HCl clear glass	BP3C	250mL NaOH plastic	VG9T	40mL Na Thio. clear vial
BP3S	250mL H2SO4 plastic	BG1S	1 liter H2SO4 clear glass	BP3Z	250mL NaOH, Zn Ac plastic	VG9U	40mL unpreserved clear vial
AG3S	250mL H2SO4 glass amber	BG1T	1 liter Na Thiosulfate clear gla	C	Air Cassettes	VSG	Headspace septa vial & HCl
AG1S	1 liter H2SO4 amber glass	BG1U	1 liter unpreserved glass	DG9B	40mL Na Bisulfite amber vial	WGFX	4oz wide jar w/hexane wipe
BP1U	1 liter unpreserved plastic	BP1A	1 liter NaOH, Asc Acid plastic	DG9M	40mL MeOH clear vial	ZPLC	Ziploc Bag

CLIENT: Mundell + Assoc.

## Sample Container Count

paceAnalytical  
[www.paceanalytical.com](http://www.paceanalytical.com)

COC PAGE 2 of 2  
COC ID# 320206

Project # 5072339

Container Codes

Container Codes	DG9H	40mL HCl amber voa vial	AG0U	100mL unpreserved amber glass	BP1N	1 liter HNO3 plastic	DG9P	40mL TSP amber vial
	AG1U	1liter unpreserved amber glass	AG1H	1 liter HCl amber glass	BP1S	1 liter H <sub>2</sub> SO <sub>4</sub> plastic	DG9S	40mL H <sub>2</sub> SO <sub>4</sub> amber vial
	WGFU	4oz clear soil jar	AG1S	1 liter H <sub>2</sub> SO <sub>4</sub> amber glass	BP1U	1 liter unpreserved plastic	DG9T	40mL Na Thio amber vial
R	terra core kit		AG1T	1 liter Na Thiosulfate amber gl	BP1Z	1 liter NaOH, Zn, AC	DG9U	40mL unpreserved amber vial
	BP2N	500mL HNO3 plastic	AG2N	500mL HNO <sub>3</sub> amber glass	BP2A	500mL NaOH, Asc Acid plastic	I	Wipe/Swab
	BP2U	500mL unpreserved plastic	AG2S	500mL H <sub>2</sub> SO <sub>4</sub> amber glass	BP2O	500mL NaOH plastic	JGFU	4oz unpreserved amber wide
	BP2S	500mL H <sub>2</sub> SO <sub>4</sub> plastic	AG2U	500mL unpreserved amber gla	BP2Z	500mL NaOH, Zn Ac	U	Summa Can
	BP3N	250mL HNO3 plastic	AG3U	250mL unpreserved amber gla	AF	Air Filter	VG9H	40mL HCl clear vial
	BP3U	250mL unpreserved plastic	BG1H	1 liter HCl clear glass	BP3C	250mL NaOH plastic.	VG9T	40mL Na Thio, clear vial
	BP3S	250mL H <sub>2</sub> SO <sub>4</sub> plastic	BG1S	1 liter H <sub>2</sub> SO <sub>4</sub> clear glass	BP3Z	250mL NaOH, Zn Ac plastic	VGGU	40mL unpreserved clear vial
	AG3S	250mL H <sub>2</sub> SO <sub>4</sub> glass amber	BG1T	1 liter Na Thiosulfate clear gla	C	Air Cassettes	VSG	Headspace septa vial & HCl
	AG1S	1 liter H <sub>2</sub> SO <sub>4</sub> amber glass	BG1U	1 liter unpreserved glass	DG9B	40mL Na Bisulfite amber vial	WGFX	4oz wide jar w/hexane wipe
	BP1U	1 liter unpreserved plastic	BP1A	1 liter NaOH, Asc Acid plastic	DG9M	40mL MeOH clear vial	ZPLC	Ziploc Bag

December 03, 2012

Mr. Mark Breting  
Mundell & Associates  
110 S. Downey Ave.  
Indianapolis, IN 46228

RE: Project: MI Plaza M01046  
Pace Project No.: 5072445

Dear Mr. Breting:

Enclosed are the analytical results for sample(s) received by the laboratory on November 16, 2012. The results relate only to the samples included in this report. Results reported herein conform to the most current TNI standards and the laboratory's Quality Assurance Manual, where applicable, unless otherwise noted in the body of the report.

If you have any questions concerning this report, please feel free to contact me.

Sincerely,



Tina Sayer

tina.sayer@pacelabs.com  
Project Manager

Enclosures



#### REPORT OF LABORATORY ANALYSIS

This report shall not be reproduced, except in full,  
without the written consent of Pace Analytical Services, Inc..

## CERTIFICATIONS

Project: MI Plaza M01046  
Pace Project No.: 5072445

---

### Indiana Certification IDs

7726 Moller Road, Indianapolis, IN 46268  
Illinois Certification #: 200074  
Indiana Certification #: C-49-06  
Kansas Certification #: E-10247  
Kentucky Certification #: 0042

Louisiana/NELAC Certification #: 04076  
Ohio VAP Certification #: CL0065  
Pennsylvania Certification #: 68-04991  
West Virginia Certification #: 330

### Ohio Certification IDs

1233 Dublin Road, Columbus, OH 43215  
Indiana Drinking Water Certification #: C-OH-11  
NVLAP Certification #: 90132

Ohio Microbiology Certification #: 943  
Ohio Drinking Water Certification #: 1030

## REPORT OF LABORATORY ANALYSIS

Page 2 of 20

This report shall not be reproduced, except in full,  
without the written consent of Pace Analytical Services, Inc..

## SAMPLE SUMMARY

Project: MI Plaza M01046

Pace Project No.: 5072445

Lab ID	Sample ID	Matrix	Date Collected	Date Received
5072445001	<b>MMW-10S</b>	Water	11/15/12 11:03	11/16/12 11:35
5072445002	<b>MMW-1S</b>	Water	11/15/12 11:32	11/16/12 11:35
5072445003	<b>MMW-8S</b>	Water	11/15/12 12:04	11/16/12 11:35
5072445004	<b>MMW-C-01</b>	Water	11/15/12 12:42	11/16/12 11:35
5072445005	<b>MMW-P-11S</b>	Water	11/15/12 13:37	11/16/12 11:35
5072445006	<b>MMW-P-11DR</b>	Water	11/15/12 14:55	11/16/12 11:35
5072445007	<b>Trip Blank</b>	Water	11/15/12 08:00	11/16/12 11:35

## REPORT OF LABORATORY ANALYSIS

Page 3 of 20

This report shall not be reproduced, except in full,  
without the written consent of Pace Analytical Services, Inc..

## SAMPLE ANALYTE COUNT

Project: MI Plaza M01046  
Pace Project No.: 5072445

Lab ID	Sample ID	Method	Analysts	Analytes Reported
5072445001	MMW-10S	EPA 8260	ALA, JLZ	18
		SM 5310C	GR1	1
		ASTM D516-90,02	DAE	1
		EPA 353.2	ILP	2
5072445002	MMW-1S	EPA 8260	ALA	18
		SM 5310C	GR1	1
		ASTM D516-90,02	DAE	1
		EPA 353.2	ILP	2
5072445003	MMW-8S	EPA 8260	ALA	18
		SM 5310C	GR1	1
		ASTM D516-90,02	DAE	1
		EPA 353.2	ILP	2
5072445004	MMW-C-01	EPA 8260	ALA	18
		SM 5310C	GR1	1
		ASTM D516-90,02	DAE	1
		EPA 353.2	ILP	2
5072445005	MMW-P-11S	EPA 8260	ALA	18
		SM 5310C	GR1	1
		ASTM D516-90,02	DAE	1
		EPA 353.2	ILP	2
5072445006	MMW-P-11DR	EPA 8260	ALA	18
		SM 5310C	GR1	1
		ASTM D516-90,02	DAE	1
		EPA 353.2	ILP	2
5072445007	Trip Blank	EPA 8260	ALA	18

## REPORT OF LABORATORY ANALYSIS

Page 4 of 20

This report shall not be reproduced, except in full,  
without the written consent of Pace Analytical Services, Inc..

## ANALYTICAL RESULTS

Project: MI Plaza M01046

Pace Project No.: 5072445

Sample: MMW-10S	Lab ID: 5072445001	Collected: 11/15/12 11:03	Received: 11/16/12 11:35	Matrix: Water				
Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
<b>8260 MSV</b>	Analytical Method: EPA 8260							
Benzene	ND	ug/L	5.0	1		11/28/12 21:50	71-43-2	
Carbon tetrachloride	ND	ug/L	5.0	1		11/28/12 21:50	56-23-5	
Chloroform	ND	ug/L	5.0	1		11/28/12 21:50	67-66-3	
1,1-Dichloroethene	ND	ug/L	5.0	1		11/28/12 21:50	75-35-4	
cis-1,2-Dichloroethene	<b>309</b>	ug/L	50.0	10		11/29/12 23:52	156-59-2	
trans-1,2-Dichloroethene	<b>13.2</b>	ug/L	5.0	1		11/28/12 21:50	156-60-5	
Ethylbenzene	ND	ug/L	5.0	1		11/28/12 21:50	100-41-4	
Methylene Chloride	ND	ug/L	5.0	1		11/28/12 21:50	75-09-2	
Naphthalene	ND	ug/L	5.0	1		11/28/12 21:50	91-20-3	
Tetrachloroethene	<b>23.0</b>	ug/L	5.0	1		11/28/12 21:50	127-18-4	
Toluene	ND	ug/L	5.0	1		11/28/12 21:50	108-88-3	
1,1,1-Trichloroethane	ND	ug/L	5.0	1		11/28/12 21:50	71-55-6	
Trichloroethene	<b>21.7</b>	ug/L	5.0	1		11/28/12 21:50	79-01-6	
Vinyl chloride	<b>286</b>	ug/L	2.0	1		11/28/12 21:50	75-01-4	
Xylene (Total)	ND	ug/L	10.0	1		11/28/12 21:50	1330-20-7	
<b>Surrogates</b>								
Dibromofluoromethane (S)	99 %.		83-123	1		11/28/12 21:50	1868-53-7	
4-Bromofluorobenzene (S)	104 %.		72-125	1		11/28/12 21:50	460-00-4	
Toluene-d8 (S)	99 %.		81-114	1		11/28/12 21:50	2037-26-5	
<b>5310C TOC</b>	Analytical Method: SM 5310C							
Total Organic Carbon	<b>3.8</b>	mg/L	0.30	1		11/22/12 03:56	7440-44-0	N2
<b>ASTM D516-9002 Sulfate Water</b>	Analytical Method: ASTM D516-90,02							
Sulfate	<b>139</b>	mg/L	62.5	1		11/20/12 10:22	14808-79-8	N2
<b>353.2 Nitrogen, NO<sub>2</sub>/NO<sub>3</sub> unpres</b>	Analytical Method: EPA 353.2							
Nitrogen, Nitrate	ND	mg/L	0.10	1		11/16/12 16:10		
Nitrogen, Nitrite	ND	mg/L	0.10	1		11/16/12 16:10		

## ANALYTICAL RESULTS

Project: MI Plaza M01046  
Pace Project No.: 5072445

Sample: MMW-1S	Lab ID: 5072445002	Collected: 11/15/12 11:32	Received: 11/16/12 11:35	Matrix: Water				
Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
<b>8260 MSV</b>	Analytical Method: EPA 8260							
Benzene	ND	ug/L	5.0	1		11/28/12 08:44	71-43-2	
Carbon tetrachloride	ND	ug/L	5.0	1		11/28/12 08:44	56-23-5	
Chloroform	ND	ug/L	5.0	1		11/28/12 08:44	67-66-3	
1,1-Dichloroethene	ND	ug/L	5.0	1		11/28/12 08:44	75-35-4	
cis-1,2-Dichloroethene	<b>5.1</b>	ug/L	5.0	1		11/28/12 08:44	156-59-2	
trans-1,2-Dichloroethene	ND	ug/L	5.0	1		11/28/12 08:44	156-60-5	
Ethylbenzene	ND	ug/L	5.0	1		11/28/12 08:44	100-41-4	
Methylene Chloride	ND	ug/L	5.0	1		11/28/12 08:44	75-09-2	
Naphthalene	ND	ug/L	5.0	1		11/28/12 08:44	91-20-3	
Tetrachloroethene	<b>413</b>	ug/L	100	20		11/28/12 09:18	127-18-4	
Toluene	ND	ug/L	5.0	1		11/28/12 08:44	108-88-3	
1,1,1-Trichloroethane	ND	ug/L	5.0	1		11/28/12 08:44	71-55-6	
Trichloroethene	<b>20.0</b>	ug/L	5.0	1		11/28/12 08:44	79-01-6	
Vinyl chloride	ND	ug/L	2.0	1		11/28/12 08:44	75-01-4	
Xylene (Total)	ND	ug/L	10.0	1		11/28/12 08:44	1330-20-7	
<b>Surrogates</b>								
Dibromofluoromethane (S)	98 %.		83-123	1		11/28/12 08:44	1868-53-7	
4-Bromofluorobenzene (S)	103 %.		72-125	1		11/28/12 08:44	460-00-4	
Toluene-d8 (S)	102 %.		81-114	1		11/28/12 08:44	2037-26-5	
<b>5310C TOC</b>	Analytical Method: SM 5310C							
Total Organic Carbon	<b>3.1</b>	mg/L	0.30	1		11/22/12 04:27	7440-44-0	N2
<b>ASTM D516-9002 Sulfate Water</b>	Analytical Method: ASTM D516-90,02							
Sulfate	<b>61.5</b>	mg/L	25.0	1		11/20/12 10:22	14808-79-8	N2
<b>353.2 Nitrogen, NO<sub>2</sub>/NO<sub>3</sub> unpres</b>	Analytical Method: EPA 353.2							
Nitrogen, Nitrate	<b>3.4</b>	mg/L	0.10	1		11/16/12 16:12		
Nitrogen, Nitrite	ND	mg/L	0.10	1		11/16/12 16:12		

## ANALYTICAL RESULTS

Project: MI Plaza M01046

Pace Project No.: 5072445

Sample: MMW-8S	Lab ID: 5072445003	Collected: 11/15/12 12:04	Received: 11/16/12 11:35	Matrix: Water				
Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
<b>8260 MSV</b>	Analytical Method: EPA 8260							
Benzene	ND	ug/L	5.0	1		11/28/12 09:52	71-43-2	
Carbon tetrachloride	ND	ug/L	5.0	1		11/28/12 09:52	56-23-5	
Chloroform	ND	ug/L	5.0	1		11/28/12 09:52	67-66-3	
1,1-Dichloroethene	ND	ug/L	5.0	1		11/28/12 09:52	75-35-4	
cis-1,2-Dichloroethene	<b>10.0</b>	ug/L	5.0	1		11/28/12 09:52	156-59-2	
trans-1,2-Dichloroethene	ND	ug/L	5.0	1		11/28/12 09:52	156-60-5	
Ethylbenzene	ND	ug/L	5.0	1		11/28/12 09:52	100-41-4	
Methylene Chloride	ND	ug/L	5.0	1		11/28/12 09:52	75-09-2	
Naphthalene	ND	ug/L	5.0	1		11/28/12 09:52	91-20-3	
Tetrachloroethene	<b>6.8</b>	ug/L	5.0	1		11/28/12 09:52	127-18-4	
Toluene	ND	ug/L	5.0	1		11/28/12 09:52	108-88-3	
1,1,1-Trichloroethane	ND	ug/L	5.0	1		11/28/12 09:52	71-55-6	
Trichloroethene	ND	ug/L	5.0	1		11/28/12 09:52	79-01-6	
Vinyl chloride	<b>127</b>	ug/L	2.0	1		11/28/12 09:52	75-01-4	
Xylene (Total)	ND	ug/L	10.0	1		11/28/12 09:52	1330-20-7	
<b>Surrogates</b>								
Dibromofluoromethane (S)	97 %.		83-123	1		11/28/12 09:52	1868-53-7	
4-Bromofluorobenzene (S)	101 %.		72-125	1		11/28/12 09:52	460-00-4	
Toluene-d8 (S)	99 %.		81-114	1		11/28/12 09:52	2037-26-5	
<b>5310C TOC</b>	Analytical Method: SM 5310C							
Total Organic Carbon	<b>1.7</b>	mg/L	0.30	1		11/22/12 04:59	7440-44-0	N2
<b>ASTM D516-9002 Sulfate Water</b>	Analytical Method: ASTM D516-90,02							
Sulfate	<b>192</b>	mg/L	25.0	1		11/20/12 10:22	14808-79-8	N2
<b>353.2 Nitrogen, NO<sub>2</sub>/NO<sub>3</sub> unpres</b>	Analytical Method: EPA 353.2							
Nitrogen, Nitrate	ND	mg/L	0.10	1		11/16/12 16:18		
Nitrogen, Nitrite	ND	mg/L	0.10	1		11/16/12 16:18		

## ANALYTICAL RESULTS

Project: MI Plaza M01046

Pace Project No.: 5072445

Sample: MMW-C-01	Lab ID: 5072445004	Collected: 11/15/12 12:42	Received: 11/16/12 11:35	Matrix: Water				
Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
<b>8260 MSV</b>	Analytical Method: EPA 8260							
Benzene	ND	ug/L	5.0	1		11/28/12 10:26	71-43-2	
Carbon tetrachloride	ND	ug/L	5.0	1		11/28/12 10:26	56-23-5	
Chloroform	ND	ug/L	5.0	1		11/28/12 10:26	67-66-3	
1,1-Dichloroethene	ND	ug/L	5.0	1		11/28/12 10:26	75-35-4	
cis-1,2-Dichloroethene	<b>10.9</b>	ug/L	5.0	1		11/28/12 10:26	156-59-2	
trans-1,2-Dichloroethene	ND	ug/L	5.0	1		11/28/12 10:26	156-60-5	
Ethylbenzene	ND	ug/L	5.0	1		11/28/12 10:26	100-41-4	
Methylene Chloride	ND	ug/L	5.0	1		11/28/12 10:26	75-09-2	
Naphthalene	ND	ug/L	5.0	1		11/28/12 10:26	91-20-3	
Tetrachloroethene	<b>24.6</b>	ug/L	5.0	1		11/28/12 10:26	127-18-4	
Toluene	ND	ug/L	5.0	1		11/28/12 10:26	108-88-3	
1,1,1-Trichloroethane	ND	ug/L	5.0	1		11/28/12 10:26	71-55-6	
Trichloroethene	ND	ug/L	5.0	1		11/28/12 10:26	79-01-6	
Vinyl chloride	<b>26.7</b>	ug/L	2.0	1		11/28/12 10:26	75-01-4	
Xylene (Total)	ND	ug/L	10.0	1		11/28/12 10:26	1330-20-7	
<b>Surrogates</b>								
Dibromofluoromethane (S)	99 %.		83-123	1		11/28/12 10:26	1868-53-7	
4-Bromofluorobenzene (S)	102 %.		72-125	1		11/28/12 10:26	460-00-4	
Toluene-d8 (S)	99 %.		81-114	1		11/28/12 10:26	2037-26-5	
<b>5310C TOC</b>	Analytical Method: SM 5310C							
Total Organic Carbon	<b>2.2</b>	mg/L	0.30	1		11/22/12 05:30	7440-44-0	N2
<b>ASTM D516-9002 Sulfate Water</b>	Analytical Method: ASTM D516-90,02							
Sulfate	<b>68.0</b>	mg/L	25.0	1		11/20/12 10:22	14808-79-8	N2
<b>353.2 Nitrogen, NO<sub>2</sub>/NO<sub>3</sub> unpres</b>	Analytical Method: EPA 353.2							
Nitrogen, Nitrate	<b>0.43</b>	mg/L	0.10	1		11/16/12 16:20		
Nitrogen, Nitrite	ND	mg/L	0.10	1		11/16/12 16:20		

## ANALYTICAL RESULTS

Project: MI Plaza M01046

Pace Project No.: 5072445

Sample: MMW-P-11S	Lab ID: 5072445005	Collected: 11/15/12 13:37	Received: 11/16/12 11:35	Matrix: Water				
Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
<b>8260 MSV</b>	Analytical Method: EPA 8260							
Benzene	ND	ug/L	5.0	1		11/28/12 23:32	71-43-2	
Carbon tetrachloride	ND	ug/L	5.0	1		11/28/12 23:32	56-23-5	
Chloroform	ND	ug/L	5.0	1		11/28/12 23:32	67-66-3	
1,1-Dichloroethene	ND	ug/L	5.0	1		11/28/12 23:32	75-35-4	
cis-1,2-Dichloroethene	<b>6.5</b>	ug/L	5.0	1		11/28/12 23:32	156-59-2	
trans-1,2-Dichloroethene	ND	ug/L	5.0	1		11/28/12 23:32	156-60-5	
Ethylbenzene	ND	ug/L	5.0	1		11/28/12 23:32	100-41-4	
Methylene Chloride	ND	ug/L	5.0	1		11/28/12 23:32	75-09-2	
Naphthalene	ND	ug/L	5.0	1		11/28/12 23:32	91-20-3	
Tetrachloroethene	<b>538</b>	ug/L	100	20		11/29/12 00:05	127-18-4	
Toluene	ND	ug/L	5.0	1		11/28/12 23:32	108-88-3	
1,1,1-Trichloroethane	ND	ug/L	5.0	1		11/28/12 23:32	71-55-6	
Trichloroethene	ND	ug/L	5.0	1		11/28/12 23:32	79-01-6	
Vinyl chloride	<b>18.7</b>	ug/L	2.0	1		11/28/12 23:32	75-01-4	
Xylene (Total)	ND	ug/L	10.0	1		11/28/12 23:32	1330-20-7	
<b>Surrogates</b>								
Dibromofluoromethane (S)	104 %.		83-123	1		11/28/12 23:32	1868-53-7	
4-Bromofluorobenzene (S)	104 %.		72-125	1		11/28/12 23:32	460-00-4	
Toluene-d8 (S)	99 %.		81-114	1		11/28/12 23:32	2037-26-5	
<b>5310C TOC</b>	Analytical Method: SM 5310C							
Total Organic Carbon	<b>1.8</b>	mg/L	0.30	1		11/22/12 06:01	7440-44-0	N2
<b>ASTM D516-9002 Sulfate Water</b>	Analytical Method: ASTM D516-90,02							
Sulfate	<b>148</b>	mg/L	25.0	1		11/20/12 10:22	14808-79-8	N2
<b>353.2 Nitrogen, NO<sub>2</sub>/NO<sub>3</sub> unpres</b>	Analytical Method: EPA 353.2							
Nitrogen, Nitrate	ND	mg/L	0.10	1		11/16/12 16:24		
Nitrogen, Nitrite	ND	mg/L	0.10	1		11/16/12 16:24		

## ANALYTICAL RESULTS

Project: MI Plaza M01046

Pace Project No.: 5072445

Sample: MMW-P-11DR	Lab ID: 5072445006	Collected: 11/15/12 14:55	Received: 11/16/12 11:35	Matrix: Water				
Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
<b>8260 MSV</b>	Analytical Method: EPA 8260							
Benzene	ND	ug/L	5.0	1		11/28/12 11:00	71-43-2	
Carbon tetrachloride	ND	ug/L	5.0	1		11/28/12 11:00	56-23-5	
Chloroform	ND	ug/L	5.0	1		11/28/12 11:00	67-66-3	
1,1-Dichloroethene	ND	ug/L	5.0	1		11/28/12 11:00	75-35-4	
cis-1,2-Dichloroethene	<b>10.4</b>	ug/L	5.0	1		11/28/12 11:00	156-59-2	
trans-1,2-Dichloroethene	ND	ug/L	5.0	1		11/28/12 11:00	156-60-5	
Ethylbenzene	ND	ug/L	5.0	1		11/28/12 11:00	100-41-4	
Methylene Chloride	ND	ug/L	5.0	1		11/28/12 11:00	75-09-2	
Naphthalene	ND	ug/L	5.0	1		11/28/12 11:00	91-20-3	
Tetrachloroethene	ND	ug/L	5.0	1		11/28/12 11:00	127-18-4	
Toluene	ND	ug/L	5.0	1		11/28/12 11:00	108-88-3	
1,1,1-Trichloroethane	ND	ug/L	5.0	1		11/28/12 11:00	71-55-6	
Trichloroethene	ND	ug/L	5.0	1		11/28/12 11:00	79-01-6	
Vinyl chloride	<b>117</b>	ug/L	2.0	1		11/28/12 11:00	75-01-4	
Xylene (Total)	ND	ug/L	10.0	1		11/28/12 11:00	1330-20-7	
<b>Surrogates</b>								
Dibromofluoromethane (S)	98 %.		83-123	1		11/28/12 11:00	1868-53-7	
4-Bromofluorobenzene (S)	100 %.		72-125	1		11/28/12 11:00	460-00-4	
Toluene-d8 (S)	99 %.		81-114	1		11/28/12 11:00	2037-26-5	
<b>5310C TOC</b>	Analytical Method: SM 5310C							
Total Organic Carbon	<b>1.8</b>	mg/L	0.30	1		11/22/12 06:33	7440-44-0	N2
<b>ASTM D516-9002 Sulfate Water</b>	Analytical Method: ASTM D516-90,02							
Sulfate	<b>147</b>	mg/L	25.0	1		11/20/12 10:22	14808-79-8	N2
<b>353.2 Nitrogen, NO<sub>2</sub>/NO<sub>3</sub> unpres</b>	Analytical Method: EPA 353.2							
Nitrogen, Nitrate	ND	mg/L	0.10	1		11/16/12 16:32		
Nitrogen, Nitrite	ND	mg/L	0.10	1		11/16/12 16:32		

## ANALYTICAL RESULTS

Project: MI Plaza M01046

Pace Project No.: 5072445

Sample: Trip Blank	Lab ID: 5072445007	Collected: 11/15/12 08:00	Received: 11/16/12 11:35	Matrix: Water				
Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
<b>8260 MSV</b>		Analytical Method: EPA 8260						
Benzene	ND	ug/L	5.0	1		11/29/12 00:39	71-43-2	
Carbon tetrachloride	ND	ug/L	5.0	1		11/29/12 00:39	56-23-5	
Chloroform	ND	ug/L	5.0	1		11/29/12 00:39	67-66-3	
1,1-Dichloroethene	ND	ug/L	5.0	1		11/29/12 00:39	75-35-4	
cis-1,2-Dichloroethene	ND	ug/L	5.0	1		11/29/12 00:39	156-59-2	
trans-1,2-Dichloroethene	ND	ug/L	5.0	1		11/29/12 00:39	156-60-5	
Ethylbenzene	ND	ug/L	5.0	1		11/29/12 00:39	100-41-4	
Methylene Chloride	ND	ug/L	5.0	1		11/29/12 00:39	75-09-2	
Naphthalene	ND	ug/L	5.0	1		11/29/12 00:39	91-20-3	
Tetrachloroethene	ND	ug/L	5.0	1		11/29/12 00:39	127-18-4	
Toluene	ND	ug/L	5.0	1		11/29/12 00:39	108-88-3	
1,1,1-Trichloroethane	ND	ug/L	5.0	1		11/29/12 00:39	71-55-6	
Trichloroethene	ND	ug/L	5.0	1		11/29/12 00:39	79-01-6	
Vinyl chloride	ND	ug/L	2.0	1		11/29/12 00:39	75-01-4	
Xylene (Total)	ND	ug/L	10.0	1		11/29/12 00:39	1330-20-7	
<b>Surrogates</b>								
Dibromofluoromethane (S)	102 %.		83-123	1		11/29/12 00:39	1868-53-7	
4-Bromofluorobenzene (S)	103 %.		72-125	1		11/29/12 00:39	460-00-4	
Toluene-d8 (S)	96 %.		81-114	1		11/29/12 00:39	2037-26-5	

## QUALITY CONTROL DATA

Project: MI Plaza M01046

Pace Project No.: 5072445

QC Batch:	MSV/48103	Analysis Method:	EPA 8260
QC Batch Method:	EPA 8260	Analysis Description:	8260 MSV
Associated Lab Samples:	5072445002, 5072445003, 5072445004, 5072445006		

METHOD BLANK: 835906   Matrix: Water

Associated Lab Samples: 5072445002, 5072445003, 5072445004, 5072445006

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
1,1,1-Trichloroethane	ug/L	ND	5.0	11/28/12 01:22	
1,1-Dichloroethene	ug/L	ND	5.0	11/28/12 01:22	
Benzene	ug/L	ND	5.0	11/28/12 01:22	
Carbon tetrachloride	ug/L	ND	5.0	11/28/12 01:22	
Chloroform	ug/L	ND	5.0	11/28/12 01:22	
cis-1,2-Dichloroethene	ug/L	ND	5.0	11/28/12 01:22	
Ethylbenzene	ug/L	ND	5.0	11/28/12 01:22	
Methylene Chloride	ug/L	ND	5.0	11/28/12 01:22	
Naphthalene	ug/L	ND	5.0	11/28/12 01:22	
Tetrachloroethene	ug/L	ND	5.0	11/28/12 01:22	
Toluene	ug/L	ND	5.0	11/28/12 01:22	
trans-1,2-Dichloroethene	ug/L	ND	5.0	11/28/12 01:22	
Trichloroethene	ug/L	ND	5.0	11/28/12 01:22	
Vinyl chloride	ug/L	ND	2.0	11/28/12 01:22	
Xylene (Total)	ug/L	ND	10.0	11/28/12 01:22	
4-Bromofluorobenzene (S)	%.	103	72-125	11/28/12 01:22	
Dibromofluoromethane (S)	%.	104	83-123	11/28/12 01:22	
Toluene-d8 (S)	%.	103	81-114	11/28/12 01:22	

LABORATORY CONTROL SAMPLE: 835907

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
1,1,1-Trichloroethane	ug/L	50	51.0	102	69-126	
1,1-Dichloroethene	ug/L	50	48.5	97	75-145	
Benzene	ug/L	50	53.0	106	76-123	
Carbon tetrachloride	ug/L	50	46.4	93	65-125	
Chloroform	ug/L	50	53.8	108	73-122	
cis-1,2-Dichloroethene	ug/L	50	52.6	105	79-129	
Ethylbenzene	ug/L	50	49.9	100	75-120	
Methylene Chloride	ug/L	50	50.9	102	61-138	
Naphthalene	ug/L	50	50.7	101	62-130	
Tetrachloroethene	ug/L	50	50.9	102	57-125	
Toluene	ug/L	50	53.2	106	72-124	
trans-1,2-Dichloroethene	ug/L	50	52.8	106	71-145	
Trichloroethene	ug/L	50	54.5	109	77-122	
Vinyl chloride	ug/L	50	45.5	91	61-146	
Xylene (Total)	ug/L	150	152	101	72-126	
4-Bromofluorobenzene (S)	%.			101	72-125	
Dibromofluoromethane (S)	%.			102	83-123	
Toluene-d8 (S)	%.			104	81-114	

Date: 12/03/2012 11:17 AM

## REPORT OF LABORATORY ANALYSIS

Page 12 of 20

This report shall not be reproduced, except in full,  
without the written consent of Pace Analytical Services, Inc..

## QUALITY CONTROL DATA

Project: MI Plaza M01046

Pace Project No.: 5072445

Parameter	Units	5072460007 Result	MS	MSD	MS Result	MSD Result	MS	MSD	% Rec	% Rec Limits	Max	Max Qual
			Spike Conc.	Spike Conc.			% Rec	% Rec	RPD		RPD	
1,1,1-Trichloroethane	ug/L	ND	50	50	48.2	51.4	96	103	37-136	6	20	
1,1-Dichloroethene	ug/L	ND	50	50	46.3	48.9	93	98	54-152	5	20	
Benzene	ug/L	ND	50	50	52.8	53.9	106	108	52-134	2	20	
Carbon tetrachloride	ug/L	ND	50	50	43.2	45.0	86	90	26-136	4	20	
Chloroform	ug/L	ND	50	50	51.2	54.3	102	109	50-134	6	20	
cis-1,2-Dichloroethene	ug/L	ND	50	50	50.6	53.8	101	108	48-145	6	20	
Ethylbenzene	ug/L	ND	50	50	49.2	50.7	98	101	29-132	3	20	
Methylene Chloride	ug/L	ND	50	50	49.7	51.1	99	102	47-141	3	20	
Naphthalene	ug/L	ND	50	50	47.7	51.0	95	102	40-124	7	20	
Tetrachloroethene	ug/L	ND	50	50	48.7	50.3	97	101	30-124	3	20	
Toluene	ug/L	ND	50	50	51.6	52.8	103	106	42-130	2	20	
trans-1,2-Dichloroethene	ug/L	ND	50	50	50.2	53.6	100	107	48-144	7	20	
Trichloroethene	ug/L	ND	50	50	52.1	56.4	104	113	44-130	8	20	
Vinyl chloride	ug/L	ND	50	50	41.5	44.0	83	88	45-159	6	20	
Xylene (Total)	ug/L	ND	150	150	153	155	102	103	29-131	1	20	
4-Bromofluorobenzene (S)	%.						99	100	72-125		20	
Dibromofluoromethane (S)	%.						96	101	83-123		20	
Toluene-d8 (S)	%.						98	98	81-114		20	

## QUALITY CONTROL DATA

Project: MI Plaza M01046

Pace Project No.: 5072445

QC Batch: MSV/48146 Analysis Method: EPA 8260  
QC Batch Method: EPA 8260 Analysis Description: 8260 MSV

Associated Lab Samples: 5072445001, 5072445005, 5072445007

METHOD BLANK: 836487 Matrix: Water

Associated Lab Samples: 5072445001, 5072445005, 5072445007

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
1,1,1-Trichloroethane	ug/L	ND	5.0	11/28/12 14:28	
1,1-Dichloroethene	ug/L	ND	5.0	11/28/12 14:28	
Benzene	ug/L	ND	5.0	11/28/12 14:28	
Carbon tetrachloride	ug/L	ND	5.0	11/28/12 14:28	
Chloroform	ug/L	ND	5.0	11/28/12 14:28	
cis-1,2-Dichloroethene	ug/L	ND	5.0	11/28/12 14:28	
Ethylbenzene	ug/L	ND	5.0	11/28/12 14:28	
Methylene Chloride	ug/L	ND	5.0	11/28/12 14:28	
Naphthalene	ug/L	ND	5.0	11/28/12 14:28	
Tetrachloroethene	ug/L	ND	5.0	11/28/12 14:28	
Toluene	ug/L	ND	5.0	11/28/12 14:28	
trans-1,2-Dichloroethene	ug/L	ND	5.0	11/28/12 14:28	
Trichloroethene	ug/L	ND	5.0	11/28/12 14:28	
Vinyl chloride	ug/L	ND	2.0	11/28/12 14:28	
Xylene (Total)	ug/L	ND	10.0	11/28/12 14:28	
4-Bromofluorobenzene (S)	%.	100	72-125	11/28/12 14:28	
Dibromofluoromethane (S)	%.	95	83-123	11/28/12 14:28	
Toluene-d8 (S)	%.	102	81-114	11/28/12 14:28	

LABORATORY CONTROL SAMPLE: 836488

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
1,1,1-Trichloroethane	ug/L	50	56.6	113	69-126	
1,1-Dichloroethene	ug/L	50	57.5	115	75-145	
Benzene	ug/L	50	53.9	108	76-123	
Carbon tetrachloride	ug/L	50	53.9	108	65-125	
Chloroform	ug/L	50	56.4	113	73-122	
cis-1,2-Dichloroethene	ug/L	50	57.7	115	79-129	
Ethylbenzene	ug/L	50	49.9	100	75-120	
Methylene Chloride	ug/L	50	60.7	121	61-138	
Naphthalene	ug/L	50	49.5	99	62-130	
Tetrachloroethene	ug/L	50	51.0	102	57-125	
Toluene	ug/L	50	46.3	93	72-124	
trans-1,2-Dichloroethene	ug/L	50	61.0	122	71-145	
Trichloroethene	ug/L	50	61.7	123	77-122 L0	
Vinyl chloride	ug/L	50	54.2	108	61-146	
Xylene (Total)	ug/L	150	149	99	72-126	
4-Bromofluorobenzene (S)	%.			105	72-125	
Dibromofluoromethane (S)	%.			104	83-123	
Toluene-d8 (S)	%.			99	81-114	

Date: 12/03/2012 11:17 AM

## REPORT OF LABORATORY ANALYSIS

Page 14 of 20

This report shall not be reproduced, except in full,  
without the written consent of Pace Analytical Services, Inc..

## QUALITY CONTROL DATA

Project: MI Plaza M01046

Pace Project No.: 5072445

Parameter	Units	5072445001		MSD		836490					
		Result	Spike Conc.	Spike Conc.	MS Result	MSD	MS % Rec	MSD % Rec	% Rec Limits	Max RPD	Max RPD
1,1,1-Trichloroethane	ug/L	ND	50	50	57.5	58.2	115	116	37-136	1	20
1,1-Dichloroethene	ug/L	ND	50	50	60.4	61.1	121	122	54-152	1	20
Benzene	ug/L	ND	50	50	57.8	57.5	116	115	52-134	.6	20
Carbon tetrachloride	ug/L	ND	50	50	51.6	54.2	103	108	26-136	5	20
Chloroform	ug/L	ND	50	50	60.3	59.4	121	119	50-134	2	20
cis-1,2-Dichloroethene	ug/L	309	50	50	368	366	118	114	48-145	.5	20
Ethylbenzene	ug/L	ND	50	50	51.1	51.9	102	104	29-132	1	20
Methylene Chloride	ug/L	ND	50	50	63.4	62.1	127	124	47-141	2	20
Naphthalene	ug/L	ND	50	50	47.1	48.1	94	96	40-124	2	20
Tetrachloroethene	ug/L	23.0	50	50	69.5	71.3	93	97	30-124	3	20
Toluene	ug/L	ND	50	50	47.0	46.5	94	93	42-130	1	20
trans-1,2-Dichloroethene	ug/L	13.2	50	50	76.5	76.6	127	127	48-144	.1	20
Trichloroethene	ug/L	21.7	50	50	83.1	81.0	123	119	44-130	3	20
Vinyl chloride	ug/L	286	50	50	302	304	33	35	45-159	.4	20 M0
Xylene (Total)	ug/L	ND	150	150	150	153	100	102	29-131	2	20
4-Bromofluorobenzene (S)	%.						105	102	72-125		20
Dibromofluoromethane (S)	%.						102	102	83-123		20
Toluene-d8 (S)	%.						97	96	81-114		20

## QUALITY CONTROL DATA

Project: MI Plaza M01046

Pace Project No.: 5072445

QC Batch:	OHIO/5185	Analysis Method:	SM 5310C
QC Batch Method:	SM 5310C	Analysis Description:	5310C TOC
Associated Lab Samples: 5072445001, 5072445002, 5072445003, 5072445004, 5072445005, 5072445006			

METHOD BLANK: 834754    Matrix: Water

Associated Lab Samples: 5072445001, 5072445002, 5072445003, 5072445004, 5072445005, 5072445006

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
Total Organic Carbon	mg/L	ND	0.30	11/21/12 19:48	N2

LABORATORY CONTROL SAMPLE: 834755

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Total Organic Carbon	mg/L	5	4.8	97	80-120	N2

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 834757    834758

Parameter	Units	5072559001 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	Max RPD	Max RPD	Max Qual
Total Organic Carbon	mg/L	3.0	4	4	7.3	7.3	107	107	75-125	.07	20	N2

SAMPLE DUPLICATE: 834756

Parameter	Units	5072559001 Result	Dup Result	RPD	Max RPD	Qualifiers
Total Organic Carbon	mg/L	3.0	3.0	1	20	N2

## QUALITY CONTROL DATA

Project: MI Plaza M01046  
Pace Project No.: 5072445

QC Batch:	WET/10502	Analysis Method:	ASTM D516-90,02
QC Batch Method:	ASTM D516-90,02	Analysis Description:	ASTM D516-9002 Sulfate Water
Associated Lab Samples:	5072445001, 5072445002, 5072445003, 5072445004, 5072445005, 5072445006		

METHOD BLANK: 833616 Matrix: Water

Associated Lab Samples: 5072445001, 5072445002, 5072445003, 5072445004, 5072445005, 5072445006

Parameter	Units	Blank	Reporting	Analyzed	Qualifiers
		Result	Limit		
Sulfate	mg/L	ND	5.0	11/20/12 10:22	N2

LABORATORY CONTROL SAMPLE: 833617

Parameter	Units	Spike	LCS	LCS	% Rec	Qualifiers
		Conc.	Result	% Rec	Limits	
Sulfate	mg/L	20	20.0	100	90-110	N2

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 833618 833619

Parameter	Units	5072342001	MS	MSD	MS	MSD	MS	MSD	% Rec	% Rec	Max
		Result	Spike	Spike							
Sulfate	mg/L	69.0	100	100	166	159	97	90	90-110	4	20 N2

MATRIX SPIKE SAMPLE: 833750

Parameter	Units	5072445002	Spike	MS	MS	% Rec	% Rec	Qualifiers
		Result	Conc.	Result	% Rec	Limits	Limits	
Sulfate	mg/L	61.5	100	186	124	90-110	M0,N2	

## QUALITY CONTROL DATA

Project: MI Plaza M01046

Pace Project No.: 5072445

QC Batch: WETA/8852 Analysis Method: EPA 353.2

QC Batch Method: EPA 353.2 Analysis Description: 353.2 Nitrate + Nitrite, Unpres.

Associated Lab Samples: 5072445001, 5072445002, 5072445003, 5072445004, 5072445005, 5072445006

METHOD BLANK: 832377 Matrix: Water

Associated Lab Samples: 5072445001, 5072445002, 5072445003, 5072445004, 5072445005, 5072445006

Parameter	Units	Blank	Reporting	Analyzed	Qualifiers
		Result	Limit		
Nitrogen, Nitrate	mg/L	ND	0.10	11/16/12 16:02	
Nitrogen, Nitrite	mg/L	ND	0.10	11/16/12 16:02	

LABORATORY CONTROL SAMPLE: 832378

Parameter	Units	Spike	LCS	LCS	% Rec	Qualifiers
		Conc.	Result	% Rec	Limits	
Nitrogen, Nitrate	mg/L	2	2.0	99	90-110	
Nitrogen, Nitrite	mg/L	2	1.9	94	90-110	

MATRIX SPIKE &amp; MATRIX SPIKE DUPLICATE: 832379 832380

Parameter	Units	5072460007	MS	MSD	MS	MSD	% Rec	% Rec	% RPD	Max	Qual
		Result	Spike	Spike							
Nitrogen, Nitrate	mg/L	0.14	2	2	2.0	2.0	91	91	90-110	.2	20
Nitrogen, Nitrite	mg/L	ND	2	2	1.7	1.7	85	85	90-110	.2	20 M3

MATRIX SPIKE SAMPLE: 832381

Parameter	Units	5072460009	Spike	MS	MS	% Rec	% Rec	Limits	RPD	Max	Qual
		Result	Conc.	Result	% Rec						
Nitrogen, Nitrate	mg/L	ND	2	1.0	51	90-110	M0				
Nitrogen, Nitrite	mg/L	0.083	2	1.1	51	90-110	M0				

## QUALIFIERS

Project: MI Plaza M01046

Pace Project No.: 5072445

---

### DEFINITIONS

DF - Dilution Factor, if reported, represents the factor applied to the reported data due to changes in sample preparation, dilution of the sample aliquot, or moisture content.

ND - Not Detected at or above adjusted reporting limit.

J - Estimated concentration above the adjusted method detection limit and below the adjusted reporting limit.

MDL - Adjusted Method Detection Limit.

PRL - Pace Reporting Limit.

RL - Reporting Limit.

S - Surrogate

1,2-Diphenylhydrazine (8270 listed analyte) decomposes to Azobenzene.

Consistent with EPA guidelines, unrounded data are displayed and have been used to calculate % recovery and RPD values.

LCS(D) - Laboratory Control Sample (Duplicate)

MS(D) - Matrix Spike (Duplicate)

DUP - Sample Duplicate

RPD - Relative Percent Difference

NC - Not Calculable.

SG - Silica Gel - Clean-Up

U - Indicates the compound was analyzed for, but not detected.

N-Nitrosodiphenylamine decomposes and cannot be separated from Diphenylamine using Method 8270. The result reported for each analyte is a combined concentration.

Pace Analytical is TNI accredited. Contact your Pace PM for the current list of accredited analytes.

TNI - The NELAC Institute.

### ANALYTE QUALIFIERS

L0 Analyte recovery in the laboratory control sample (LCS) was outside QC limits.

M0 Matrix spike recovery and/or matrix spike duplicate recovery was outside laboratory control limits.

M3 Matrix spike recovery was outside laboratory control limits due to matrix interferences.

N2 The lab does not hold TNI accreditation for this parameter.

**QUALITY CONTROL DATA CROSS REFERENCE TABLE**

Project: MI Plaza M01046  
Pace Project No.: 5072445

Lab ID	Sample ID	QC Batch Method	QC Batch	Analytical Method	Analytical Batch
5072445001	MMW-10S	EPA 8260	MSV/48146		
5072445002	MMW-1S	EPA 8260	MSV/48103		
5072445003	MMW-8S	EPA 8260	MSV/48103		
5072445004	MMW-C-01	EPA 8260	MSV/48103		
5072445005	MMW-P-11S	EPA 8260	MSV/48146		
5072445006	MMW-P-11DR	EPA 8260	MSV/48103		
5072445007	Trip Blank	EPA 8260	MSV/48146		
5072445001	MMW-10S	SM 5310C	OHIO/5185		
5072445002	MMW-1S	SM 5310C	OHIO/5185		
5072445003	MMW-8S	SM 5310C	OHIO/5185		
5072445004	MMW-C-01	SM 5310C	OHIO/5185		
5072445005	MMW-P-11S	SM 5310C	OHIO/5185		
5072445006	MMW-P-11DR	SM 5310C	OHIO/5185		
5072445001	MMW-10S	ASTM D516-90,02	WET/10502		
5072445002	MMW-1S	ASTM D516-90,02	WET/10502		
5072445003	MMW-8S	ASTM D516-90,02	WET/10502		
5072445004	MMW-C-01	ASTM D516-90,02	WET/10502		
5072445005	MMW-P-11S	ASTM D516-90,02	WET/10502		
5072445006	MMW-P-11DR	ASTM D516-90,02	WET/10502		
5072445001	MMW-10S	EPA 353.2	WETA/8852		
5072445002	MMW-1S	EPA 353.2	WETA/8852		
5072445003	MMW-8S	EPA 353.2	WETA/8852		
5072445004	MMW-C-01	EPA 353.2	WETA/8852		
5072445005	MMW-P-11S	EPA 353.2	WETA/8852		
5072445006	MMW-P-11DR	EPA 353.2	WETA/8852		



Pace Analytical®  
[www.pacealabs.com](http://www.pacealabs.com)

**CHAIN-OF-CUSTODY / Analytical Request Document**

The Chain-of-Custody is a LEGAL DOCUMENT. All relevant fields must be completed accurately.

Section A Required Client Information:		Section B Required Project Information:	
Company: <u>Mandell &amp; Associates</u> Address: <u>100 S. Downer Ave</u> <u>Des Plaines, IL 60219</u> Email To: <u></u> Phone: <u>312-430-9860</u> Requested Due Date/TAT: <u>5 days</u>		Report To: <u>Mark Bretting</u> Copy To: <u></u> Purchase Order No.: <u></u> Project Name: <u>M. Daze</u> Project Number: <u>M01046</u>	
Section C Invoice Information:		Attention: <u>M. Mandell</u> Address: <u></u> Pace Quote Reference: Pace Project Manager: Pace Profile #:	
<b>REGULATORY AGENCY</b> <input type="checkbox"/> NPDES <input type="checkbox"/> GROUND WATER <input type="checkbox"/> DRINKING WATER <input type="checkbox"/> UST <input type="checkbox"/> RCRA <input type="checkbox"/> OTHER		<b>Site Location</b> STATE:	
<b>Requested Analysis Filtered (Y/N)</b> ✓ Analysis Test <input type="checkbox"/> Y/N		<b>Pace Project No./Lab I.D.</b> <u>5672445</u>	
<b>Preservatives</b> <input checked="" type="checkbox"/> Composite <input checked="" type="checkbox"/> End Grab		<b>Residual Chlorine (Y/N)</b> <input checked="" type="checkbox"/>	
<b>SAMPLE TEMP AT COLLECTION</b> <b>COLLECTED</b> Composite   Start   End Grab		<b>Other</b> <chem>Na2S2O3</chem> <chem>HCl</chem> <chem>HNO3</chem> <chem>H2SO4</chem> Uptreated # OF CONTAINERS	
<b>MATRIX CODES</b> MATRIX / CODE Drinking Water DW Waste Water WT Product P Soil/Solid SL Oil WP Air AR Tissue TS Other OT		<b>MATRIX CODE</b> (see valid codes to left) SAMPLE TYPE (G=GRAB C=COMP)	
<b>SAMPLE ID</b> <small>(A-Z, 0-9, -)</small> Sample IDs MUST BE UNIQUE		<b>DATE</b> <b>TIME</b> <b>DATE</b> <b>TIME</b> 11/15/12 11:33 AM   11:34 AM   12:51 PM   12:49 PM   1:37 PM   2:55 PM	
<b>ITEM #</b> 1   2   3   4   5   6   7   8   9   10   11   12		<b>RELINQUISHED BY / AFFILIATION</b> <u>Mark Bretting</u> <b>ACCEPTED BY / AFFILIATION</b> <u>Zahn Tech</u> <b>DATE</b> <b>TIME</b> <b>DATE</b> <b>TIME</b> 11/16/12 11:35 AM   11/16/12 11:35 AM	
<b>ADDITIONAL COMMENTS</b> <u>1 Lip Blank</u>		<b>SAMPLE CONDITIONS</b> ✓ N/A	
<b>SAMPLER NAME AND SIGNATURE</b> ORIGINAL <u>WT/Pace 11-16-12 11-14</u>		<b>PRINT NAME OF SAMPLER</b> : <u>Mark Bretting</u> <b>SIGNATURE OF SAMPLER</b> : <u>Mark Bretting</u>	
<b>Temp in °C</b> Received on <input checked="" type="checkbox"/> Yes ( <b>Y/N</b> ) Sealed Container ( <b>Y/N</b> ) Samples intact ( <b>Y/N</b> )		<b>Page:</b> <u>1</u> <b>of:</b> <u>1</u> F-ALL-Q-020 rev 07 15-May-2007 <small>*Important Note: By signing this form you are accepting Pace's NET 30 day payment terms and agreeing to late charges of 1.5% per month for any invoices not paid within 30 days.</small>	

**Sample Condition Upon Receipt**

Pace Analytical

Client Name: Mundell + Assoc. Project # 5072445

Courier:  FedEx  UPS  USPS  Client  Commercial  Pace Other \_\_\_\_\_

Tracking #: \_\_\_\_\_

Custody Seal on Cooler/Box Present:  yes  no Seals intact:  yes  no

Date/Time 5035A kits placed in freezer

Packing Material:  Bubble Wrap  Bubble Bags  None  Other foam

Thermometer Used 12346 ABCDE Type of Ice: Wet Blue None  Samples on ice, cooling process has begun

Cooler Temperature  
(Corrected, if applicable)

1.1°C

Ice Visible in Sample Containers:

yes  no

Date and Initials of person examining contents: Kle 11-16-12

Temp should be above freezing to 6°C	Comments:
Chain of Custody Present:	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A 1.
Chain of Custody Filled Out:	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A 2.
Chain of Custody Relinquished:	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A 3.
Sampler Name & Signature on COC:	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A 4.
Short Hold Time Analysis (<72hr):	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A 5. <u>Nitrates</u>
Rush Turn Around Time Requested:	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No <input type="checkbox"/> N/A 6.
Containers Intact:	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A 7.
Sample Labels match COC: -Includes date/time/ID/Analysis	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A 8.
All containers needing acid/base pres. have been checked? exceptions: VOA, coliform, TOC, O&G	<input type="checkbox"/> Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> N/A 9. (Circle) HNO <sub>3</sub> H <sub>2</sub> SO <sub>4</sub> NaOH HCl
All containers needing preservation are found to be in compliance with EPA recommendation.	<input type="checkbox"/> Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> N/A
Headspace in VOA Vials (>6mm):	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A 10. <u>1 vial for mmw-10S</u>
Trip Blank Present:	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A 11.
Trip Blank Custody Seals Present	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A
Project Manager Review:	
Samples Arrived within Hold Time:	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A 12.
Sufficient Volume:	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A 13.
Correct Containers Used:	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A 14.

Field Data Required? Y / N

Client Notification/ Resolution:

Person Contacted: \_\_\_\_\_ Date/Time: \_\_\_\_\_

Comments/ Resolution: \_\_\_\_\_

Project Manager Review:

J. Sawyer

Date: 11/16/12

### Sample Container Count

CLIENT: Munderell + Associates.

COC PAGE 1 of 1  
COC ID# 1320207

Project # 5072445

Sample Line

Sample Line	Item	DG9H	AG111	WGEII	AG011	B 4/6	BD2N	BD2I	BD2S	BD3N	BD3I	BD3S	AC2S	AC1H
-------------	------	------	-------	-------	-------	-------	------	------	------	------	------	------	------	------

### Comments

Comments

1 2 3 4 5 6 7 8 9 10 11 12

Container Codes

Container Codes	Description	Quantity	Storage	Notes
DG9H	40mL HCl amber voa vial	AG0U	100mL unpreserved amber glass	BP1N 1 liter HNO3 plastic
AG1U	1liter unpreserved amber glass	AG1H	1 liter HCl amber glass	BP1S 1 liter H2SO4 plastic
WGFU	4oz clear soil jar	AG1S	1 liter H2SO4 amber glass	BP1U 1 liter unpreserved plastic
R	terra core kit	AG1T	1 liter Na Thiosulfate amber gl	BP1Z 1 liter NaOH, Zn, Ac
BP2N	500mL HNO3 plastic	AG2N	500mL HNO3 amber glass	BP2A 500mL NaOH, Asc Acid plastic
BP2U	500mL unpreserved plastic	AG2S	500mL H2SO4 amber glass	BP2O 500mL NaOH plastic
BP2S	500mL H2SO4 plastic	AG2U	500mL unpreserved amber gla	BP2Z 500mL NaOH, Zn Ac
BP3N	250mL HNO3 plastic	AG3U	250mL unpreserved amber gla	AF Air Filter
BP3U	250mL unpreserved plastic	BG1H	1 liter HCl clear glass	BP3C 250mL NaOH plastic
BP3S	250mL H2SO4 plastic	BG1S	1 liter H2SO4 clear glass	BP3Z 250mL NaOH, Zn Ac plastic
AG3S	250mL H2SO4 glass amber	BG1T	1 liter Na Thiosulfate clear gla	C Air Cassette
AG1S	1 liter H2SO4 amber glass	BG1U	1 liter unpreserved glass	DG9B 40mL Na Bisulfate amber vial
BP1U	1 liter unpreserved plastic	BP1A	1 liter NaOH, Asc Acid plastic	DG9M 40mL MeOH clear vial
				DG9P 40mL TSP amber vial
				DG9S 40mL H2SO4 amber vial
				DG9T 40mL Na Thio amber vial
				DGGU 40mL unpreserved amber vial
				I Wipe/Swab
				JGFU 4oz unpreserved amber wide
				U Summa Can
				VG9H 40mL HCl clear vial
				VG9T 40mL Na Thio. clear vial
				VGGU 40mL unpreserved clear vial
				VSG Headspace septa vial & HCl
				WGFX 4oz wide jar w/hexane wipe
				ZPLC Zplac Bag

December 05, 2012

Mr. Mark Breting  
Mundell & Associates  
110 S. Downey Ave.  
Indianapolis, IN 46228

RE: Project: Michigan Plaza  
Pace Project No.: 5072577

Dear Mr. Breting:

Enclosed are the analytical results for sample(s) received by the laboratory on November 20, 2012. The results relate only to the samples included in this report. Results reported herein conform to the most current TNI standards and the laboratory's Quality Assurance Manual, where applicable, unless otherwise noted in the body of the report.

If you have any questions concerning this report, please feel free to contact me.

Sincerely,



Tina Sayer

tina.sayer@pacelabs.com  
Project Manager

Enclosures



#### REPORT OF LABORATORY ANALYSIS

This report shall not be reproduced, except in full,  
without the written consent of Pace Analytical Services, Inc..

## CERTIFICATIONS

Project: Michigan Plaza  
Pace Project No.: 5072577

### Indiana Certification IDs

7726 Moller Road, Indianapolis, IN 46268  
Illinois Certification #: 200074  
Indiana Certification #: C-49-06  
Kansas Certification #: E-10247  
Kentucky Certification #: 0042

Louisiana/NELAC Certification #: 04076  
Ohio VAP Certification #: CL0065  
Pennsylvania Certification #: 68-04991  
West Virginia Certification #: 330

### Ohio Certification IDs

1233 Dublin Road, Columbus, OH 43215  
Indiana Drinking Water Certification #: C-OH-11  
NVLAP Certification #: 90132

Ohio Microbiology Certification #: 943  
Ohio Drinking Water Certification #: 1030

## REPORT OF LABORATORY ANALYSIS

Page 2 of 26

This report shall not be reproduced, except in full,  
without the written consent of Pace Analytical Services, Inc..

## SAMPLE SUMMARY

Project: Michigan Plaza  
Pace Project No.: 5072577

Lab ID	Sample ID	Matrix	Date Collected	Date Received
5072577001	<b>MW-170S</b>	Water	11/16/12 10:26	11/20/12 11:30
5072577002	<b>MW-170D</b>	Water	11/16/12 10:42	11/20/12 11:30
5072577003	<b>MW-167D</b>	Water	11/16/12 13:00	11/20/12 11:30
5072577004	<b>MW-168D</b>	Water	11/16/12 14:16	11/20/12 11:30
5072577005	<b>MMW-P-12S</b>	Water	11/19/12 09:35	11/20/12 11:30
5072577006	<b>MMW-P-12D</b>	Water	11/19/12 10:35	11/20/12 11:30
5072577007	<b>MMW-C-02D</b>	Water	11/19/12 11:43	11/20/12 11:30
5072577008	<b>MMW-C-16S</b>	Water	11/19/12 12:19	11/20/12 11:30
5072577009	<b>MMW-C-16D</b>	Water	11/19/12 13:55	11/20/12 11:30
5072577010	<b>MMW-P-13S</b>	Water	11/19/12 15:10	11/20/12 11:30
5072577011	<b>MMW-P-13D</b>	Water	11/19/12 16:31	11/20/12 11:30
5072577012	<b>DUP 2</b>	Water	11/16/12 08:00	11/20/12 11:30
5072577013	<b>TRIP BLANK</b>	Water	11/16/12 08:00	11/20/12 11:30

## REPORT OF LABORATORY ANALYSIS

Page 3 of 26

This report shall not be reproduced, except in full,  
without the written consent of Pace Analytical Services, Inc..

## SAMPLE ANALYTE COUNT

Project: Michigan Plaza  
Pace Project No.: 5072577

Lab ID	Sample ID	Method	Analysts	Analytes Reported
5072577001	MW-170S	EPA 8260	RSW	18
5072577002	MW-170D	EPA 8260	RSW	18
5072577003	MW-167D	EPA 8260	RSW	18
5072577004	MW-168D	EPA 8260	RSW	18
5072577005	MMW-P-12S	EPA 8260	RSW	18
		SM 5310C	GR1	1
		ASTM D516-90,02	DAE	1
		EPA 353.2	ILP	2
5072577006	MMW-P-12D	EPA 8260	RSW	18
		SM 5310C	GR1	1
		ASTM D516-90,02	DAE	1
		EPA 353.2	ILP	2
5072577007	MMW-C-02D	EPA 8260	RSW	18
5072577008	MMW-C-16S	EPA 8260	RSW	18
5072577009	MMW-C-16D	EPA 8260	RSW	18
5072577010	MMW-P-13S	EPA 8260	RSW	18
5072577011	MMW-P-13D	EPA 8260	RSW	18
5072577012	DUP 2	EPA 8260	RSW	18
5072577013	TRIP BLANK	EPA 8260	RSW	18

## REPORT OF LABORATORY ANALYSIS

Page 4 of 26

This report shall not be reproduced, except in full,  
without the written consent of Pace Analytical Services, Inc..

## ANALYTICAL RESULTS

Project: Michigan Plaza  
Pace Project No.: 5072577

Sample: MW-170S	Lab ID: 5072577001	Collected: 11/16/12 10:26	Received: 11/20/12 11:30	Matrix: Water				
Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
<b>8260 MSV</b>	Analytical Method: EPA 8260							
Benzene	ND	ug/L	5.0	1		11/29/12 18:26	71-43-2	
Carbon tetrachloride	ND	ug/L	5.0	1		11/29/12 18:26	56-23-5	
Chloroform	ND	ug/L	5.0	1		11/29/12 18:26	67-66-3	
1,1-Dichloroethene	ND	ug/L	5.0	1		11/29/12 18:26	75-35-4	
cis-1,2-Dichloroethene	<b>6.1</b>	ug/L	5.0	1		11/29/12 18:26	156-59-2	
trans-1,2-Dichloroethene	ND	ug/L	5.0	1		11/29/12 18:26	156-60-5	
Ethylbenzene	ND	ug/L	5.0	1		11/29/12 18:26	100-41-4	
Methylene Chloride	ND	ug/L	5.0	1		11/29/12 18:26	75-09-2	
Naphthalene	ND	ug/L	5.0	1		11/29/12 18:26	91-20-3	
Tetrachloroethene	ND	ug/L	5.0	1		11/29/12 18:26	127-18-4	
Toluene	ND	ug/L	5.0	1		11/29/12 18:26	108-88-3	
1,1,1-Trichloroethane	ND	ug/L	5.0	1		11/29/12 18:26	71-55-6	
Trichloroethene	ND	ug/L	5.0	1		11/29/12 18:26	79-01-6	
Vinyl chloride	ND	ug/L	2.0	1		11/29/12 18:26	75-01-4	
Xylene (Total)	ND	ug/L	10.0	1		11/29/12 18:26	1330-20-7	
<b>Surrogates</b>								
Dibromofluoromethane (S)	102 %.		83-123	1		11/29/12 18:26	1868-53-7	
4-Bromofluorobenzene (S)	104 %.		72-125	1		11/29/12 18:26	460-00-4	
Toluene-d8 (S)	100 %.		81-114	1		11/29/12 18:26	2037-26-5	

## ANALYTICAL RESULTS

Project: Michigan Plaza  
Pace Project No.: 5072577

Sample: MW-170D	Lab ID: 5072577002	Collected: 11/16/12 10:42	Received: 11/20/12 11:30	Matrix: Water				
Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
<b>8260 MSV</b>	Analytical Method: EPA 8260							
Benzene	ND	ug/L	5.0	1		11/29/12 19:04	71-43-2	
Carbon tetrachloride	ND	ug/L	5.0	1		11/29/12 19:04	56-23-5	
Chloroform	ND	ug/L	5.0	1		11/29/12 19:04	67-66-3	
1,1-Dichloroethene	ND	ug/L	5.0	1		11/29/12 19:04	75-35-4	
cis-1,2-Dichloroethene	ND	ug/L	5.0	1		11/29/12 19:04	156-59-2	
trans-1,2-Dichloroethene	ND	ug/L	5.0	1		11/29/12 19:04	156-60-5	
Ethylbenzene	ND	ug/L	5.0	1		11/29/12 19:04	100-41-4	
Methylene Chloride	ND	ug/L	5.0	1		11/29/12 19:04	75-09-2	
Naphthalene	ND	ug/L	5.0	1		11/29/12 19:04	91-20-3	
Tetrachloroethene	ND	ug/L	5.0	1		11/29/12 19:04	127-18-4	
Toluene	ND	ug/L	5.0	1		11/29/12 19:04	108-88-3	
1,1,1-Trichloroethane	ND	ug/L	5.0	1		11/29/12 19:04	71-55-6	
Trichloroethene	ND	ug/L	5.0	1		11/29/12 19:04	79-01-6	
Vinyl chloride	<b>62.8</b>	ug/L	2.0	1		11/29/12 19:04	75-01-4	
Xylene (Total)	ND	ug/L	10.0	1		11/29/12 19:04	1330-20-7	
<b>Surrogates</b>								
Dibromofluoromethane (S)	103 %.		83-123	1		11/29/12 19:04	1868-53-7	
4-Bromofluorobenzene (S)	103 %.		72-125	1		11/29/12 19:04	460-00-4	
Toluene-d8 (S)	100 %.		81-114	1		11/29/12 19:04	2037-26-5	

## ANALYTICAL RESULTS

Project: Michigan Plaza  
Pace Project No.: 5072577

Sample: MW-167D	Lab ID: 5072577003	Collected: 11/16/12 13:00	Received: 11/20/12 11:30	Matrix: Water				
Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
<b>8260 MSV</b>	Analytical Method: EPA 8260							
Benzene	ND	ug/L	5.0	1		11/29/12 19:42	71-43-2	
Carbon tetrachloride	ND	ug/L	5.0	1		11/29/12 19:42	56-23-5	
Chloroform	ND	ug/L	5.0	1		11/29/12 19:42	67-66-3	
1,1-Dichloroethene	ND	ug/L	5.0	1		11/29/12 19:42	75-35-4	
cis-1,2-Dichloroethene	<b>480</b>	ug/L	50.0	10		11/30/12 16:52	156-59-2	
trans-1,2-Dichloroethene	<b>19.9</b>	ug/L	5.0	1		11/29/12 19:42	156-60-5	
Ethylbenzene	ND	ug/L	5.0	1		11/29/12 19:42	100-41-4	
Methylene Chloride	ND	ug/L	5.0	1		11/29/12 19:42	75-09-2	
Naphthalene	ND	ug/L	5.0	1		11/29/12 19:42	91-20-3	
Tetrachloroethene	ND	ug/L	5.0	1		11/29/12 19:42	127-18-4	
Toluene	ND	ug/L	5.0	1		11/29/12 19:42	108-88-3	
1,1,1-Trichloroethane	ND	ug/L	5.0	1		11/29/12 19:42	71-55-6	
Trichloroethene	ND	ug/L	5.0	1		11/29/12 19:42	79-01-6	
Vinyl chloride	<b>9.2</b>	ug/L	2.0	1		11/29/12 19:42	75-01-4	
Xylene (Total)	ND	ug/L	10.0	1		11/29/12 19:42	1330-20-7	
<b>Surrogates</b>								
Dibromofluoromethane (S)	103 %.		83-123	1		11/29/12 19:42	1868-53-7	
4-Bromofluorobenzene (S)	101 %.		72-125	1		11/29/12 19:42	460-00-4	
Toluene-d8 (S)	100 %.		81-114	1		11/29/12 19:42	2037-26-5	

## ANALYTICAL RESULTS

Project: Michigan Plaza  
Pace Project No.: 5072577

Sample: MW-168D	Lab ID: 5072577004	Collected: 11/16/12 14:16	Received: 11/20/12 11:30	Matrix: Water				
Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
<b>8260 MSV</b>	Analytical Method: EPA 8260							
Benzene	ND	ug/L	5.0	1		11/30/12 03:55	71-43-2	
Carbon tetrachloride	ND	ug/L	5.0	1		11/30/12 03:55	56-23-5	
Chloroform	ND	ug/L	5.0	1		11/30/12 03:55	67-66-3	
1,1-Dichloroethene	ND	ug/L	5.0	1		11/30/12 03:55	75-35-4	
cis-1,2-Dichloroethene	<b>6.9</b>	ug/L	5.0	1		11/30/12 03:55	156-59-2	
trans-1,2-Dichloroethene	ND	ug/L	5.0	1		11/30/12 03:55	156-60-5	
Ethylbenzene	ND	ug/L	5.0	1		11/30/12 03:55	100-41-4	
Methylene Chloride	ND	ug/L	5.0	1		11/30/12 03:55	75-09-2	
Naphthalene	ND	ug/L	5.0	1		11/30/12 03:55	91-20-3	
Tetrachloroethene	ND	ug/L	5.0	1		11/30/12 03:55	127-18-4	
Toluene	ND	ug/L	5.0	1		11/30/12 03:55	108-88-3	
1,1,1-Trichloroethane	ND	ug/L	5.0	1		11/30/12 03:55	71-55-6	
Trichloroethene	ND	ug/L	5.0	1		11/30/12 03:55	79-01-6	
Vinyl chloride	<b>81.3</b>	ug/L	2.0	1		11/30/12 03:55	75-01-4	
Xylene (Total)	ND	ug/L	10.0	1		11/30/12 03:55	1330-20-7	
<b>Surrogates</b>								
Dibromofluoromethane (S)	106 %.		83-123	1		11/30/12 03:55	1868-53-7	
4-Bromofluorobenzene (S)	105 %.		72-125	1		11/30/12 03:55	460-00-4	
Toluene-d8 (S)	99 %.		81-114	1		11/30/12 03:55	2037-26-5	

## ANALYTICAL RESULTS

Project: Michigan Plaza  
Pace Project No.: 5072577

Sample: MMW-P-12S	Lab ID: 5072577005	Collected: 11/19/12 09:35	Received: 11/20/12 11:30	Matrix: Water				
Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
<b>8260 MSV</b>	Analytical Method: EPA 8260							
Benzene	ND	ug/L	5.0	1		11/29/12 22:14	71-43-2	
Carbon tetrachloride	ND	ug/L	5.0	1		11/29/12 22:14	56-23-5	
Chloroform	ND	ug/L	5.0	1		11/29/12 22:14	67-66-3	
1,1-Dichloroethene	ND	ug/L	5.0	1		11/29/12 22:14	75-35-4	
cis-1,2-Dichloroethene	<b>763</b>	ug/L	50.0	10		11/30/12 17:30	156-59-2	
trans-1,2-Dichloroethene	<b>15.8</b>	ug/L	5.0	1		11/29/12 22:14	156-60-5	
Ethylbenzene	ND	ug/L	5.0	1		11/29/12 22:14	100-41-4	
Methylene Chloride	ND	ug/L	5.0	1		11/29/12 22:14	75-09-2	
Naphthalene	ND	ug/L	5.0	1		11/29/12 22:14	91-20-3	
Tetrachloroethene	ND	ug/L	5.0	1		11/29/12 22:14	127-18-4	
Toluene	ND	ug/L	5.0	1		11/29/12 22:14	108-88-3	
1,1,1-Trichloroethane	ND	ug/L	5.0	1		11/29/12 22:14	71-55-6	
Trichloroethene	ND	ug/L	5.0	1		11/29/12 22:14	79-01-6	
Vinyl chloride	<b>76.1</b>	ug/L	2.0	1		11/29/12 22:14	75-01-4	
Xylene (Total)	ND	ug/L	10.0	1		11/29/12 22:14	1330-20-7	
<b>Surrogates</b>								
Dibromofluoromethane (S)	102 %.		83-123	1		11/29/12 22:14	1868-53-7	
4-Bromofluorobenzene (S)	103 %.		72-125	1		11/29/12 22:14	460-00-4	
Toluene-d8 (S)	101 %.		81-114	1		11/29/12 22:14	2037-26-5	
<b>5310C TOC</b>	Analytical Method: SM 5310C							
Total Organic Carbon	<b>1.7</b>	mg/L	0.30	1		11/22/12 10:28	7440-44-0	N2
<b>ASTM D516-9002 Sulfate Water</b>	Analytical Method: ASTM D516-90,02							
Sulfate	<b>146</b>	mg/L	25.0	1		11/26/12 14:38	14808-79-8	N2
<b>353.2 Nitrogen, NO<sub>2</sub>/NO<sub>3</sub> unpres</b>	Analytical Method: EPA 353.2							
Nitrogen, Nitrate	ND	mg/L	0.10	1		11/20/12 13:22		
Nitrogen, Nitrite	ND	mg/L	0.10	1		11/20/12 13:22		

## ANALYTICAL RESULTS

Project: Michigan Plaza  
Pace Project No.: 5072577

Sample: MMW-P-12D	Lab ID: 5072577006	Collected: 11/19/12 10:35	Received: 11/20/12 11:30	Matrix: Water				
Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
<b>8260 MSV</b>	Analytical Method: EPA 8260							
Benzene	ND	ug/L	5.0	1		11/29/12 22:52	71-43-2	
Carbon tetrachloride	ND	ug/L	5.0	1		11/29/12 22:52	56-23-5	
Chloroform	ND	ug/L	5.0	1		11/29/12 22:52	67-66-3	
1,1-Dichloroethene	ND	ug/L	5.0	1		11/29/12 22:52	75-35-4	
cis-1,2-Dichloroethene	<b>793</b>	ug/L	50.0	10		11/30/12 18:08	156-59-2	
trans-1,2-Dichloroethene	<b>17.4</b>	ug/L	5.0	1		11/29/12 22:52	156-60-5	
Ethylbenzene	ND	ug/L	5.0	1		11/29/12 22:52	100-41-4	
Methylene Chloride	ND	ug/L	5.0	1		11/29/12 22:52	75-09-2	
Naphthalene	ND	ug/L	5.0	1		11/29/12 22:52	91-20-3	
Tetrachloroethene	ND	ug/L	5.0	1		11/29/12 22:52	127-18-4	
Toluene	ND	ug/L	5.0	1		11/29/12 22:52	108-88-3	
1,1,1-Trichloroethane	ND	ug/L	5.0	1		11/29/12 22:52	71-55-6	
Trichloroethene	ND	ug/L	5.0	1		11/29/12 22:52	79-01-6	
Vinyl chloride	<b>91.8</b>	ug/L	2.0	1		11/29/12 22:52	75-01-4	
Xylene (Total)	ND	ug/L	10.0	1		11/29/12 22:52	1330-20-7	
<b>Surrogates</b>								
Dibromofluoromethane (S)	104 %.		83-123	1		11/29/12 22:52	1868-53-7	
4-Bromofluorobenzene (S)	105 %.		72-125	1		11/29/12 22:52	460-00-4	
Toluene-d8 (S)	101 %.		81-114	1		11/29/12 22:52	2037-26-5	
<b>5310C TOC</b>	Analytical Method: SM 5310C							
Total Organic Carbon	<b>1.9</b>	mg/L	0.30	1		11/22/12 11:59	7440-44-0	N2
<b>ASTM D516-9002 Sulfate Water</b>	Analytical Method: ASTM D516-90,02							
Sulfate	<b>165</b>	mg/L	25.0	1		11/26/12 14:38	14808-79-8	N2
<b>353.2 Nitrogen, NO<sub>2</sub>/NO<sub>3</sub> unpres</b>	Analytical Method: EPA 353.2							
Nitrogen, Nitrate	ND	mg/L	0.10	1		11/20/12 13:23		
Nitrogen, Nitrite	<b>0.67</b>	mg/L	0.10	1		11/20/12 13:23		

## ANALYTICAL RESULTS

Project: Michigan Plaza  
Pace Project No.: 5072577

Sample: MMW-C-02D	Lab ID: 5072577007	Collected: 11/19/12 11:43	Received: 11/20/12 11:30	Matrix: Water				
Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
<b>8260 MSV</b>	Analytical Method: EPA 8260							
Benzene	ND	ug/L	5.0	1		11/29/12 23:29	71-43-2	
Carbon tetrachloride	ND	ug/L	5.0	1		11/29/12 23:29	56-23-5	
Chloroform	ND	ug/L	5.0	1		11/29/12 23:29	67-66-3	
1,1-Dichloroethene	ND	ug/L	5.0	1		11/29/12 23:29	75-35-4	
cis-1,2-Dichloroethene	ND	ug/L	5.0	1		11/29/12 23:29	156-59-2	
trans-1,2-Dichloroethene	ND	ug/L	5.0	1		11/29/12 23:29	156-60-5	
Ethylbenzene	ND	ug/L	5.0	1		11/29/12 23:29	100-41-4	
Methylene Chloride	ND	ug/L	5.0	1		11/29/12 23:29	75-09-2	
Naphthalene	ND	ug/L	5.0	1		11/29/12 23:29	91-20-3	
Tetrachloroethene	ND	ug/L	5.0	1		11/29/12 23:29	127-18-4	
Toluene	ND	ug/L	5.0	1		11/29/12 23:29	108-88-3	
1,1,1-Trichloroethane	ND	ug/L	5.0	1		11/29/12 23:29	71-55-6	
Trichloroethene	ND	ug/L	5.0	1		11/29/12 23:29	79-01-6	
Vinyl chloride	125	ug/L	2.0	1		11/29/12 23:29	75-01-4	
Xylene (Total)	ND	ug/L	10.0	1		11/29/12 23:29	1330-20-7	
<b>Surrogates</b>								
Dibromofluoromethane (S)	104 %.		83-123	1		11/29/12 23:29	1868-53-7	
4-Bromofluorobenzene (S)	103 %.		72-125	1		11/29/12 23:29	460-00-4	
Toluene-d8 (S)	100 %.		81-114	1		11/29/12 23:29	2037-26-5	

## ANALYTICAL RESULTS

Project: Michigan Plaza  
Pace Project No.: 5072577

Sample: MMW-C-16S	Lab ID: 5072577008	Collected: 11/19/12 12:19	Received: 11/20/12 11:30	Matrix: Water				
Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
<b>8260 MSV</b>	Analytical Method: EPA 8260							
Benzene	ND	ug/L	5.0	1		11/30/12 00:07	71-43-2	
Carbon tetrachloride	ND	ug/L	5.0	1		11/30/12 00:07	56-23-5	
Chloroform	ND	ug/L	5.0	1		11/30/12 00:07	67-66-3	
1,1-Dichloroethene	ND	ug/L	5.0	1		11/30/12 00:07	75-35-4	
cis-1,2-Dichloroethene	ND	ug/L	5.0	1		11/30/12 00:07	156-59-2	
trans-1,2-Dichloroethene	ND	ug/L	5.0	1		11/30/12 00:07	156-60-5	
Ethylbenzene	ND	ug/L	5.0	1		11/30/12 00:07	100-41-4	
Methylene Chloride	ND	ug/L	5.0	1		11/30/12 00:07	75-09-2	
Naphthalene	ND	ug/L	5.0	1		11/30/12 00:07	91-20-3	
Tetrachloroethene	ND	ug/L	5.0	1		11/30/12 00:07	127-18-4	
Toluene	ND	ug/L	5.0	1		11/30/12 00:07	108-88-3	
1,1,1-Trichloroethane	ND	ug/L	5.0	1		11/30/12 00:07	71-55-6	
Trichloroethene	ND	ug/L	5.0	1		11/30/12 00:07	79-01-6	
Vinyl chloride	ND	ug/L	2.0	1		11/30/12 00:07	75-01-4	
Xylene (Total)	ND	ug/L	10.0	1		11/30/12 00:07	1330-20-7	
<b>Surrogates</b>								
Dibromofluoromethane (S)	104 %.		83-123	1		11/30/12 00:07	1868-53-7	
4-Bromofluorobenzene (S)	104 %.		72-125	1		11/30/12 00:07	460-00-4	
Toluene-d8 (S)	102 %.		81-114	1		11/30/12 00:07	2037-26-5	

## ANALYTICAL RESULTS

Project: Michigan Plaza  
Pace Project No.: 5072577

Sample: MMW-C-16D	Lab ID: 5072577009	Collected: 11/19/12 13:55	Received: 11/20/12 11:30	Matrix: Water				
Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
<b>8260 MSV</b>	Analytical Method: EPA 8260							
Benzene	ND	ug/L	5.0	1		11/30/12 00:45	71-43-2	
Carbon tetrachloride	ND	ug/L	5.0	1		11/30/12 00:45	56-23-5	
Chloroform	ND	ug/L	5.0	1		11/30/12 00:45	67-66-3	
1,1-Dichloroethene	ND	ug/L	5.0	1		11/30/12 00:45	75-35-4	
cis-1,2-Dichloroethene	ND	ug/L	5.0	1		11/30/12 00:45	156-59-2	
trans-1,2-Dichloroethene	ND	ug/L	5.0	1		11/30/12 00:45	156-60-5	
Ethylbenzene	ND	ug/L	5.0	1		11/30/12 00:45	100-41-4	
Methylene Chloride	ND	ug/L	5.0	1		11/30/12 00:45	75-09-2	
Naphthalene	ND	ug/L	5.0	1		11/30/12 00:45	91-20-3	
Tetrachloroethene	ND	ug/L	5.0	1		11/30/12 00:45	127-18-4	
Toluene	ND	ug/L	5.0	1		11/30/12 00:45	108-88-3	
1,1,1-Trichloroethane	ND	ug/L	5.0	1		11/30/12 00:45	71-55-6	
Trichloroethene	ND	ug/L	5.0	1		11/30/12 00:45	79-01-6	
Vinyl chloride	349	ug/L	20.0	10		11/30/12 18:45	75-01-4	
Xylene (Total)	ND	ug/L	10.0	1		11/30/12 00:45	1330-20-7	
<b>Surrogates</b>								
Dibromofluoromethane (S)	105 %.		83-123	1		11/30/12 00:45	1868-53-7	
4-Bromofluorobenzene (S)	103 %.		72-125	1		11/30/12 00:45	460-00-4	
Toluene-d8 (S)	99 %.		81-114	1		11/30/12 00:45	2037-26-5	

## ANALYTICAL RESULTS

Project: Michigan Plaza  
Pace Project No.: 5072577

Sample: MMW-P-13S	Lab ID: 5072577010	Collected: 11/19/12 15:10	Received: 11/20/12 11:30	Matrix: Water				
Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
<b>8260 MSV</b>	Analytical Method: EPA 8260							
Benzene	ND	ug/L	5.0	1		11/29/12 20:20	71-43-2	
Carbon tetrachloride	ND	ug/L	5.0	1		11/29/12 20:20	56-23-5	
Chloroform	ND	ug/L	5.0	1		11/29/12 20:20	67-66-3	
1,1-Dichloroethene	ND	ug/L	5.0	1		11/29/12 20:20	75-35-4	
cis-1,2-Dichloroethene	ND	ug/L	5.0	1		11/29/12 20:20	156-59-2	
trans-1,2-Dichloroethene	ND	ug/L	5.0	1		11/29/12 20:20	156-60-5	
Ethylbenzene	ND	ug/L	5.0	1		11/29/12 20:20	100-41-4	
Methylene Chloride	ND	ug/L	5.0	1		11/29/12 20:20	75-09-2	
Naphthalene	ND	ug/L	5.0	1		11/29/12 20:20	91-20-3	
Tetrachloroethene	ND	ug/L	5.0	1		11/29/12 20:20	127-18-4	
Toluene	ND	ug/L	5.0	1		11/29/12 20:20	108-88-3	
1,1,1-Trichloroethane	ND	ug/L	5.0	1		11/29/12 20:20	71-55-6	
Trichloroethene	ND	ug/L	5.0	1		11/29/12 20:20	79-01-6	
Vinyl chloride	3.6	ug/L	2.0	1		11/29/12 20:20	75-01-4	
Xylene (Total)	ND	ug/L	10.0	1		11/29/12 20:20	1330-20-7	
<b>Surrogates</b>								
Dibromofluoromethane (S)	103 %.		83-123	1		11/29/12 20:20	1868-53-7	
4-Bromofluorobenzene (S)	104 %.		72-125	1		11/29/12 20:20	460-00-4	
Toluene-d8 (S)	100 %.		81-114	1		11/29/12 20:20	2037-26-5	

## ANALYTICAL RESULTS

Project: Michigan Plaza  
Pace Project No.: 5072577

Sample: MMW-P-13D	Lab ID: 5072577011	Collected: 11/19/12 16:31	Received: 11/20/12 11:30	Matrix: Water				
Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
<b>8260 MSV</b>	Analytical Method: EPA 8260							
Benzene	ND	ug/L	5.0	1		11/29/12 20:58	71-43-2	
Carbon tetrachloride	ND	ug/L	5.0	1		11/29/12 20:58	56-23-5	
Chloroform	ND	ug/L	5.0	1		11/29/12 20:58	67-66-3	
1,1-Dichloroethene	ND	ug/L	5.0	1		11/29/12 20:58	75-35-4	
cis-1,2-Dichloroethene	ND	ug/L	5.0	1		11/29/12 20:58	156-59-2	
trans-1,2-Dichloroethene	ND	ug/L	5.0	1		11/29/12 20:58	156-60-5	
Ethylbenzene	ND	ug/L	5.0	1		11/29/12 20:58	100-41-4	
Methylene Chloride	ND	ug/L	5.0	1		11/29/12 20:58	75-09-2	
Naphthalene	ND	ug/L	5.0	1		11/29/12 20:58	91-20-3	
Tetrachloroethene	ND	ug/L	5.0	1		11/29/12 20:58	127-18-4	
Toluene	ND	ug/L	5.0	1		11/29/12 20:58	108-88-3	
1,1,1-Trichloroethane	ND	ug/L	5.0	1		11/29/12 20:58	71-55-6	
Trichloroethene	ND	ug/L	5.0	1		11/29/12 20:58	79-01-6	
Vinyl chloride	154	ug/L	2.0	1		11/29/12 20:58	75-01-4	
Xylene (Total)	ND	ug/L	10.0	1		11/29/12 20:58	1330-20-7	
<b>Surrogates</b>								
Dibromofluoromethane (S)	103 %.		83-123	1		11/29/12 20:58	1868-53-7	
4-Bromofluorobenzene (S)	102 %.		72-125	1		11/29/12 20:58	460-00-4	
Toluene-d8 (S)	100 %.		81-114	1		11/29/12 20:58	2037-26-5	

## ANALYTICAL RESULTS

Project: Michigan Plaza  
Pace Project No.: 5072577

Sample: DUP 2	Lab ID: 5072577012	Collected: 11/16/12 08:00	Received: 11/20/12 11:30	Matrix: Water				
Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
<b>8260 MSV</b>	Analytical Method: EPA 8260							
Benzene	ND	ug/L	5.0	1		11/29/12 21:36	71-43-2	
Carbon tetrachloride	ND	ug/L	5.0	1		11/29/12 21:36	56-23-5	
Chloroform	ND	ug/L	5.0	1		11/29/12 21:36	67-66-3	
1,1-Dichloroethene	ND	ug/L	5.0	1		11/29/12 21:36	75-35-4	
cis-1,2-Dichloroethene	ND	ug/L	5.0	1		11/29/12 21:36	156-59-2	
trans-1,2-Dichloroethene	ND	ug/L	5.0	1		11/29/12 21:36	156-60-5	
Ethylbenzene	ND	ug/L	5.0	1		11/29/12 21:36	100-41-4	
Methylene Chloride	ND	ug/L	5.0	1		11/29/12 21:36	75-09-2	
Naphthalene	ND	ug/L	5.0	1		11/29/12 21:36	91-20-3	
Tetrachloroethene	ND	ug/L	5.0	1		11/29/12 21:36	127-18-4	
Toluene	ND	ug/L	5.0	1		11/29/12 21:36	108-88-3	
1,1,1-Trichloroethane	ND	ug/L	5.0	1		11/29/12 21:36	71-55-6	
Trichloroethene	ND	ug/L	5.0	1		11/29/12 21:36	79-01-6	
Vinyl chloride	161	ug/L	2.0	1		11/29/12 21:36	75-01-4	
Xylene (Total)	ND	ug/L	10.0	1		11/29/12 21:36	1330-20-7	
<b>Surrogates</b>								
Dibromofluoromethane (S)	103 %.		83-123	1		11/29/12 21:36	1868-53-7	
4-Bromofluorobenzene (S)	106 %.		72-125	1		11/29/12 21:36	460-00-4	
Toluene-d8 (S)	101 %.		81-114	1		11/29/12 21:36	2037-26-5	

## ANALYTICAL RESULTS

Project: Michigan Plaza  
Pace Project No.: 5072577

Sample: TRIP BLANK	Lab ID: 5072577013	Collected: 11/16/12 08:00	Received: 11/20/12 11:30	Matrix: Water				
Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
<b>8260 MSV</b>	Analytical Method: EPA 8260							
Benzene	ND	ug/L	5.0	1		11/30/12 05:48	71-43-2	
Carbon tetrachloride	ND	ug/L	5.0	1		11/30/12 05:48	56-23-5	
Chloroform	ND	ug/L	5.0	1		11/30/12 05:48	67-66-3	
1,1-Dichloroethene	ND	ug/L	5.0	1		11/30/12 05:48	75-35-4	
cis-1,2-Dichloroethene	ND	ug/L	5.0	1		11/30/12 05:48	156-59-2	
trans-1,2-Dichloroethene	ND	ug/L	5.0	1		11/30/12 05:48	156-60-5	
Ethylbenzene	ND	ug/L	5.0	1		11/30/12 05:48	100-41-4	
Methylene Chloride	ND	ug/L	5.0	1		11/30/12 05:48	75-09-2	
Naphthalene	ND	ug/L	5.0	1		11/30/12 05:48	91-20-3	
Tetrachloroethene	ND	ug/L	5.0	1		11/30/12 05:48	127-18-4	
Toluene	ND	ug/L	5.0	1		11/30/12 05:48	108-88-3	
1,1,1-Trichloroethane	ND	ug/L	5.0	1		11/30/12 05:48	71-55-6	
Trichloroethene	ND	ug/L	5.0	1		11/30/12 05:48	79-01-6	
Vinyl chloride	ND	ug/L	2.0	1		11/30/12 05:48	75-01-4	
Xylene (Total)	ND	ug/L	10.0	1		11/30/12 05:48	1330-20-7	
<b>Surrogates</b>								
Dibromofluoromethane (S)	105 %.		83-123	1		11/30/12 05:48	1868-53-7	
4-Bromofluorobenzene (S)	105 %.		72-125	1		11/30/12 05:48	460-00-4	
Toluene-d8 (S)	101 %.		81-114	1		11/30/12 05:48	2037-26-5	



Pace Analytical Services, Inc.

1233 Dublin Road  
Columbus, OH 43215  
(614)486-5421

Pace Analytical Services, Inc.

7726 Moller Road  
Indianapolis, IN 46268  
(317)875-5894

## **QUALITY CONTROL DATA**

Project: Michigan Plaza  
Pace Project No.: 5072577

QC Batch: MSV/48175 Analysis Method: EPA 8260  
QC Batch Method: EPA 8260 Analysis Description: 8260 MSV  
Associated Lab Samples: 5072577001, 5072577002, 5072577003, 5072577005, 5072577006, 5072577007, 5072577008, 5072577009,  
5072577010, 5072577011, 5072577012

METHOD BLANK: 837020 Matrix: Water

Associated Lab Samples: 5072577001, 5072577002, 5072577003, 5072577005, 5072577006, 5072577007, 5072577008, 5072577009, 5072577010, 5072577011, 5072577012

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
1,1,1-Trichloroethane	ug/L	ND	5.0	11/29/12 14:39	
1,1-Dichloroethene	ug/L	ND	5.0	11/29/12 14:39	
Benzene	ug/L	ND	5.0	11/29/12 14:39	
Carbon tetrachloride	ug/L	ND	5.0	11/29/12 14:39	
Chloroform	ug/L	ND	5.0	11/29/12 14:39	
cis-1,2-Dichloroethene	ug/L	ND	5.0	11/29/12 14:39	
Ethylbenzene	ug/L	ND	5.0	11/29/12 14:39	
Methylene Chloride	ug/L	ND	5.0	11/29/12 14:39	
Naphthalene	ug/L	ND	5.0	11/29/12 14:39	
Tetrachloroethene	ug/L	ND	5.0	11/29/12 14:39	
Toluene	ug/L	ND	5.0	11/29/12 14:39	
trans-1,2-Dichloroethene	ug/L	ND	5.0	11/29/12 14:39	
Trichloroethene	ug/L	ND	5.0	11/29/12 14:39	
Vinyl chloride	ug/L	ND	2.0	11/29/12 14:39	
Xylene (Total)	ug/L	ND	10.0	11/29/12 14:39	
4-Bromofluorobenzene (S)	%.	108	72-125	11/29/12 14:39	
Dibromofluoromethane (S)	%.	106	83-123	11/29/12 14:39	
Toluene-d8 (S)	%.	99	81-114	11/29/12 14:39	

LABORATORY CONTROL SAMPLE: 837021

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
1,1,1-Trichloroethane	ug/L	50	53.7	107	69-126	
1,1-Dichloroethene	ug/L	50	49.8	100	75-145	
Benzene	ug/L	50	49.3	99	76-123	
Carbon tetrachloride	ug/L	50	54.3	109	65-125	
Chloroform	ug/L	50	51.7	103	73-122	
cis-1,2-Dichloroethene	ug/L	50	47.7	95	79-129	
Ethylbenzene	ug/L	50	49.5	99	75-120	
Methylene Chloride	ug/L	50	52.6	105	61-138	
Naphthalene	ug/L	50	55.2	110	62-130	
Tetrachloroethene	ug/L	50	50.3	101	57-125	
Toluene	ug/L	50	50.2	100	72-124	
trans-1,2-Dichloroethene	ug/L	50	48.3	97	71-145	
Trichloroethene	ug/L	50	53.8	108	77-122	
Vinyl chloride	ug/L	50	46.6	93	61-146	
Xylene (Total)	ug/L	150	149	99	72-126	
4-Bromofluorobenzene (S)	%.			99	72-125	
Dibromofluoromethane (S)	%.			108	83-123	
Toluene-d8 (S)	%.			100	81-114	

Date: 12/05/2012 11:35 AM

## **REPORT OF LABORATORY ANALYSIS**

Page 18 of 26

This report shall not be reproduced, except in full,  
without the written consent of Pace Analytical Services, Inc.

## QUALITY CONTROL DATA

Project: Michigan Plaza  
Pace Project No.: 5072577

MATRIX SPIKE & MATRIX SPIKE DUPLICATE:			837022                    837023											
Parameter	Units	Result	MS	MSD	MS	MSD	MS	MSD	% Rec	% Rec	Limits	RPD	RPD	Max
			Spike Conc.	Spike Conc.										
1,1,1-Trichloroethane	ug/L	ND	50	50	58.2	58.2	116	116	37-136	.05	.20			
1,1-Dichloroethene	ug/L	ND	50	50	54.3	55.3	109	111	54-152	2	.20			
Benzene	ug/L	ND	50	50	53.3	53.8	107	108	52-134	1	.20			
Carbon tetrachloride	ug/L	ND	50	50	59.0	58.7	118	117	26-136	.5	.20			
Chloroform	ug/L	ND	50	50	56.4	57.1	113	114	50-134	1	.20			
cis-1,2-Dichloroethene	ug/L	ND	50	50	51.3	53.1	103	106	48-145	4	.20			
Ethylbenzene	ug/L	ND	50	50	50.0	50.9	100	102	29-132	2	.20			
Methylene Chloride	ug/L	ND	50	50	58.0	59.2	116	118	47-141	2	.20			
Naphthalene	ug/L	ND	50	50	53.5	58.9	107	118	40-124	10	.20			
Tetrachloroethene	ug/L	ND	50	50	51.3	52.4	103	105	30-124	2	.20			
Toluene	ug/L	ND	50	50	52.1	52.9	104	106	42-130	2	.20			
trans-1,2-Dichloroethene	ug/L	ND	50	50	52.0	52.3	104	105	48-144	.5	.20			
Trichloroethene	ug/L	ND	50	50	56.1	57.4	112	115	44-130	2	.20			
Vinyl chloride	ug/L	ND	50	50	51.3	52.1	103	104	45-159	2	.20			
Xylene (Total)	ug/L	ND	150	150	153	154	102	102	29-131	.6	.20			
4-Bromofluorobenzene (S)	%.						101	99	72-125		.20			
Dibromofluoromethane (S)	%.						108	109	83-123		.20			
Toluene-d8 (S)	%.						102	103	81-114		.20			



Pace Analytical Services, Inc.

1233 Dublin Road  
Columbus, OH 43215  
(614)486-5421

Pace Analytical Services, Inc.

7726 Moller Road  
dianapolis, IN 46268  
(317)875-5894

## **QUALITY CONTROL DATA**

Project: Michigan Plaza

Pace Project No.: 5072577

QC Batch: MSV/48176

Analysis Method: EPA 8260

QC Batch Method: EPA 8260

Analysis Description: 8260 MSV

Associated Lab Samples: 5072577004, 5072577013

---

METHOD BLANK: 837027

## Matrix: Water

Associated Lab Samples: 5072577004, 5072577013

Reporting

Limit

## Qualifiers

1,1,1-Trichloroethane	ug/L	ND	5.0	11/30/12 03:17
1,1-Dichloroethene	ug/L	ND	5.0	11/30/12 03:17
Benzene	ug/L	ND	5.0	11/30/12 03:17
Carbon tetrachloride	ug/L	ND	5.0	11/30/12 03:17
Chloroform	ug/L	ND	5.0	11/30/12 03:17
cis-1,2-Dichloroethene	ug/L	ND	5.0	11/30/12 03:17
Ethylbenzene	ug/L	ND	5.0	11/30/12 03:17
Methylene Chloride	ug/L	ND	5.0	11/30/12 03:17
Naphthalene	ug/L	ND	5.0	11/30/12 03:17
Tetrachloroethene	ug/L	ND	5.0	11/30/12 03:17
Toluene	ug/L	ND	5.0	11/30/12 03:17
trans-1,2-Dichloroethene	ug/L	ND	5.0	11/30/12 03:17
Trichloroethene	ug/L	ND	5.0	11/30/12 03:17
Vinyl chloride	ug/L	ND	2.0	11/30/12 03:17
Xylene (Total)	ug/L	ND	10.0	11/30/12 03:17
4-Bromofluorobenzene (S)	%.	104	72-125	11/30/12 03:17
Dibromofluoromethane (S)	%.	104	83-123	11/30/12 03:17
Toluene-d8 (S)	%.	99	81-114	11/30/12 03:17

---

LABORATORY CONTROL SAMPLE: 837028

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
1,1,1-Trichloroethane	ug/L	50	51.0	102	69-126	
1,1-Dichloroethene	ug/L	50	48.1	96	75-145	
Benzene	ug/L	50	47.8	96	76-123	
Carbon tetrachloride	ug/L	50	51.6	103	65-125	
Chloroform	ug/L	50	50.2	100	73-122	
cis-1,2-Dichloroethene	ug/L	50	46.6	93	79-129	
Ethylbenzene	ug/L	50	46.8	94	75-120	
Methylene Chloride	ug/L	50	52.0	104	61-138	
Naphthalene	ug/L	50	51.8	104	62-130	
Tetrachloroethene	ug/L	50	47.0	94	57-125	
Toluene	ug/L	50	47.8	96	72-124	
trans-1,2-Dichloroethene	ug/L	50	46.4	93	71-145	
Trichloroethene	ug/L	50	50.6	101	77-122	
Vinyl chloride	ug/L	50	44.2	88	61-146	
Xylene (Total)	ug/L	150	141	94	72-126	
4-Bromofluorobenzene (S)	%.			99	72-125	
Dibromofluoromethane (S)	%.			106	83-123	
Toluene-d8 (S)	%.			101	81-114	

Date: 12/05/2012 11:35 AM

## **REPORT OF LABORATORY ANALYSIS**

Page 20 of 26

This report shall not be reproduced, except in full,  
without the written consent of Pace Analytical Services, Inc.

## QUALITY CONTROL DATA

Project: Michigan Plaza  
Pace Project No.: 5072577

MATRIX SPIKE & MATRIX SPIKE DUPLICATE:			837029                    837030											
Parameter	Units	Result	MS	MSD	MS	MSD	MS	MSD	% Rec	% Rec	Max			
			Spike Conc.	Spike Conc.							Limits	RPD	RPD	Qual
1,1,1-Trichloroethane	ug/L	ND	50	50	46.7	48.7	93	97	37-136	4	20			
1,1-Dichloroethene	ug/L	ND	50	50	46.7	47.5	93	95	54-152	2	20			
Benzene	ug/L	ND	50	50	42.4	43.2	85	86	52-134	2	20			
Carbon tetrachloride	ug/L	ND	50	50	44.2	46.1	88	92	26-136	4	20			
Chloroform	ug/L	ND	50	50	47.8	49.0	96	98	50-134	3	20			
cis-1,2-Dichloroethene	ug/L	6.9	50	50	49.5	50.3	85	87	48-145	2	20			
Ethylbenzene	ug/L	ND	50	50	27.3	27.7	55	55	29-132	1	20			
Methylene Chloride	ug/L	ND	50	50	51.2	52.4	102	105	47-141	2	20			
Naphthalene	ug/L	ND	50	50	41.3	42.2	83	84	40-124	2	20			
Tetrachloroethene	ug/L	ND	50	50	30.0	30.3	60	61	30-124	.9	20			
Toluene	ug/L	ND	50	50	35.4	36.3	71	72	42-130	3	20			
trans-1,2-Dichloroethene	ug/L	ND	50	50	42.2	43.2	84	86	48-144	2	20			
Trichloroethene	ug/L	ND	50	50	41.1	41.7	81	83	44-130	1	20			
Vinyl chloride	ug/L	81.3	50	50	119	123	76	84	45-159	3	20			
Xylene (Total)	ug/L	ND	150	150	82.1	83.5	55	56	29-131	2	20			
4-Bromofluorobenzene (S)	%.						101	103	72-125		20			
Dibromofluoromethane (S)	%.						107	106	83-123		20			
Toluene-d8 (S)	%.						101	101	81-114		20			

## QUALITY CONTROL DATA

Project: Michigan Plaza  
Pace Project No.: 5072577

QC Batch: OHIO/5186 Analysis Method: SM 5310C  
QC Batch Method: SM 5310C Analysis Description: 5310C TOC  
Associated Lab Samples: 5072577005, 5072577006

METHOD BLANK: 834763 Matrix: Water

Associated Lab Samples: 5072577005, 5072577006

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
Total Organic Carbon	mg/L	ND	0.30	11/22/12 09:34	N2

LABORATORY CONTROL SAMPLE: 834764

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Total Organic Carbon	mg/L	5	4.8	96	80-120	N2

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 834766 834767

Parameter	Units	5072577005 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	Max RPD	Max RPD	Max Qual
Total Organic Carbon	mg/L	1.7	4	4	5.6	5.7	98	98	75-125	.2	20	N2

SAMPLE DUPLICATE: 834765

Parameter	Units	5072577005 Result	Dup Result	RPD	Max RPD	Qualifiers
Total Organic Carbon	mg/L	1.7	1.7	.3	20	N2

## QUALITY CONTROL DATA

Project: Michigan Plaza  
Pace Project No.: 5072577

QC Batch:	WET/10527	Analysis Method:	ASTM D516-90,02
QC Batch Method:	ASTM D516-90,02	Analysis Description:	ASTM D516-9002 Sulfate Water
Associated Lab Samples:	5072577005, 5072577006		

METHOD BLANK: 835194 Matrix: Water

Associated Lab Samples: 5072577005, 5072577006

Parameter	Units	Blank	Reporting	Analyzed	Qualifiers
		Result	Limit		
Sulfate	mg/L	ND	5.0	11/26/12 14:38	N2

LABORATORY CONTROL SAMPLE: 835195

Parameter	Units	Spike	LCS	LCS	% Rec	Qualifiers
		Conc.	Result	% Rec	Limits	
Sulfate	mg/L	20	19.9	100	90-110	N2

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 835196 835197

Parameter	Units	5072559001	MS	MSD	MS	MSD	MS	MSD	% Rec	% Rec	Max	RPD	RPD	Qual
		Result	Spike	Spike										
Sulfate	mg/L	67.0	100	100	156	155	89	88	90-110	.6	20	M3,N2		

MATRIX SPIKE SAMPLE: 835198

Parameter	Units	5072654002	Spike	MS	MS	MS	MSD	MS	% Rec	% Rec	Max	RPD	RPD	Qual
		Result	Conc.	Result	% Rec									
Sulfate	mg/L	68.0	100	154	86	90-110	.6	20	M3,N2					

## QUALITY CONTROL DATA

Project: Michigan Plaza  
Pace Project No.: 5072577

QC Batch:	WETA/8865	Analysis Method:	EPA 353.2
QC Batch Method:	EPA 353.2	Analysis Description:	353.2 Nitrate + Nitrite, Unpres.
Associated Lab Samples:	5072577005, 5072577006		

METHOD BLANK: 833731 Matrix: Water

Associated Lab Samples: 5072577005, 5072577006

Parameter	Units	Blank Result	Reporting Limit		Analyzed	Qualifiers
			Limit	Analyzed		
Nitrogen, Nitrate	mg/L	ND	0.10	11/20/12 13:04		
Nitrogen, Nitrite	mg/L	ND	0.10	11/20/12 13:04		

LABORATORY CONTROL SAMPLE: 833732

Parameter	Units	Spike Conc.	LCS Result		% Rec	% Rec Limits	Qualifiers
			LCS	% Rec			
Nitrogen, Nitrate	mg/L	2	1.9	94	90-110		
Nitrogen, Nitrite	mg/L	2	1.9	96	90-110		

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 833733 833734

Parameter	Units	5072564001 Result	MS Spike	MSD Spike	MS	MSD	MS	MSD	% Rec	Max	
			Conc.	Conc.	Result	Result	% Rec	% Rec	Limits	RPD	Qual
Nitrogen, Nitrate	mg/L	0.079J	2	2	1.8	1.9	88	92	90-110	5	M0
Nitrogen, Nitrite	mg/L	ND	2	2	1.9	1.9	94	93	90-110	.9	20

MATRIX SPIKE SAMPLE: 833815

Parameter	Units	5072577006 Result	Spike Conc.	MS Result		MS % Rec	% Rec	Qualifiers
				Conc.	Result			
Nitrogen, Nitrate	mg/L	ND	2	1.9		94	90-110	
Nitrogen, Nitrite	mg/L	0.67	2	1.8		58	90-110	M0

## QUALIFIERS

Project: Michigan Plaza  
Pace Project No.: 5072577

### DEFINITIONS

DF - Dilution Factor, if reported, represents the factor applied to the reported data due to changes in sample preparation, dilution of the sample aliquot, or moisture content.

ND - Not Detected at or above adjusted reporting limit.

J - Estimated concentration above the adjusted method detection limit and below the adjusted reporting limit.

MDL - Adjusted Method Detection Limit.

PRL - Pace Reporting Limit.

RL - Reporting Limit.

S - Surrogate

1,2-Diphenylhydrazine (8270 listed analyte) decomposes to Azobenzene.

Consistent with EPA guidelines, unrounded data are displayed and have been used to calculate % recovery and RPD values.

LCS(D) - Laboratory Control Sample (Duplicate)

MS(D) - Matrix Spike (Duplicate)

DUP - Sample Duplicate

RPD - Relative Percent Difference

NC - Not Calculable.

SG - Silica Gel - Clean-Up

U - Indicates the compound was analyzed for, but not detected.

N-Nitrosodiphenylamine decomposes and cannot be separated from Diphenylamine using Method 8270. The result reported for each analyte is a combined concentration.

Pace Analytical is TNI accredited. Contact your Pace PM for the current list of accredited analytes.

TNI - The NELAC Institute.

### ANALYTE QUALIFIERS

M0 Matrix spike recovery and/or matrix spike duplicate recovery was outside laboratory control limits.

M3 Matrix spike recovery was outside laboratory control limits due to matrix interferences.

N2 The lab does not hold TNI accreditation for this parameter.

**QUALITY CONTROL DATA CROSS REFERENCE TABLE**

Project: Michigan Plaza  
Pace Project No.: 5072577

Lab ID	Sample ID	QC Batch Method	QC Batch	Analytical Method	Analytical Batch
5072577001	MW-170S	EPA 8260	MSV/48175		
5072577002	MW-170D	EPA 8260	MSV/48175		
5072577003	MW-167D	EPA 8260	MSV/48175		
5072577004	MW-168D	EPA 8260	MSV/48176		
5072577005	MMW-P-12S	EPA 8260	MSV/48175		
5072577006	MMW-P-12D	EPA 8260	MSV/48175		
5072577007	MMW-C-02D	EPA 8260	MSV/48175		
5072577008	MMW-C-16S	EPA 8260	MSV/48175		
5072577009	MMW-C-16D	EPA 8260	MSV/48175		
5072577010	MMW-P-13S	EPA 8260	MSV/48175		
5072577011	MMW-P-13D	EPA 8260	MSV/48175		
5072577012	DUP 2	EPA 8260	MSV/48175		
5072577013	TRIP BLANK	EPA 8260	MSV/48176		
5072577005	MMW-P-12S	SM 5310C	OHIO/5186		
5072577006	MMW-P-12D	SM 5310C	OHIO/5186		
5072577005	MMW-P-12S	ASTM D516-90,02	WET/10527		
5072577006	MMW-P-12D	ASTM D516-90,02	WET/10527		
5072577005	MMW-P-12S	EPA 353.2	WETA/8865		
5072577006	MMW-P-12D	EPA 353.2	WETA/8865		



## CHAIN-OF-CUSTODY / Analytical Request Document

The Chain-of-Custody is a LEGAL DOCUMENT. All relevant fields must be completed accurately.

Section A  
Required Client Information:

Company: Mundell & Assoc.  
 Address: No. 5 - Dowley Ave  
Fax: 718-747-4129  
 Email To: faels1@nycap.rr.com  
 Phone:   
 Requested Due Date/TAT: 5/5/

Section B  
Required Project Information:

Report To: Mark Bechtel  
 Copy To:   
 Purchase Order No.:   
 Project Name:   
 Project Number:

Section C  
Invoice Information:

Attention: Meric Tebbe  
 Company Name: Mundell  
 Address:   
 Pace Quote Reference:   
 Pace Project Manager:   
 Pace Profile #:

Section D Required Client Information	SAMPLE ID (A-Z, 0-9 / -) Sample IDs MUST BE UNIQUE	#	COLLECTED MATRIX CODE Drinking Water Water Waste Water Product Soil/Solid Oil Wipe Air Tissue Other	COMPOSITE START SL Oil WP AR TS OT	COMPOSITE END/GRAB G-GRAB C-COMP)	Preservatives	Requested Analysis Filtered (Y/N)												Pace Project No./Lab ID. DOI -002 -003 -004 -005 -006 -007 -008 -009 -010 -011 -012		
							# OF CONTAINERS SAMPLE TEMP AT COLLECTION														
1	MW-1705	WT	5				11:16:17	10:21:18													
2	MW-1707		1				11:42:18														
3	MW-167D		1				1:10:19														
4	MW-168D		1				2:16:09														
5	MW-9-125		1				11:49:12	9:33:19													
6	MW-9-12D		1				11:16:12	10:35:18													
7	MW-C-02D		1				11:17:34														
8	MW-C-105		1				12:19:09														
9	MW-C-16D		1				1:33:09														
10	MW-9-135		1				3:10:09														
11	MW-9-13D		1				4:31:19														
12	Duo 2		1																		
ADDITIONAL COMMENTS		RElinquished BY AFFILIATION		DATE	TIME	ACCEPTED BY AFFILIATION		DATE	TIME	SAMPLE CONDITIONS											
W/I PACE SCB 1/10/12 ORIGINAL		A. S. J.		11/20/12	11:30	Zehn Tech		11/20/12	3:50	Y N Y											

W/I PACE SCB 1/10/12 ORIGINAL  
12:10

SAMPLER NAME AND SIGNATURE	PRINT Name of SAMPLER: <u>A. S. J.</u>
SIGNATURE of SAMPLER:	SIGNATURE of SAMPLER: <u>Zehn Tech</u>
DATE Signed (MM/DD/YY):	DATE Signed (MM/DD/YY): <u>11/19/12</u>

Temp In °C	Received on (Y/N)	Custody Seal Code (N/M)	Demands Intercepted (Y/N)

Important Note: By signing this form you are accepting Pace's NET 30 day payment terms and agreeing to late charges of 1.5% per month for any invoices not paid within 30 days.

F-ALL-Q-020rev.07, 15-May-2007



# CHAIN-OF-CUSTODY / Analytical Request Document

The Chain-of-Custody is a LEGAL DOCUMENT. All relevant fields must be completed accurately.

## Section A

### Required Client Information:

Company: **Mundell & Assoc.**  
 Address: **110 S. Dealey Ave**  
**Tulsa, IN**  
 Email To:  
 Phone: **Fax:**  
 Requested Due Date/TAT: **SAT**

## Section B

### Required Project Information:

Report To: **Mark Breitling**  
 Copy To:  
 Purchase Order No.:  
 Project Name: **M1 Plaza**  
 Project Number: **M1046**

## Section C

### Invoice Information:

Attention: **Mark Breitling**  
 Company Name: **Mundell**  
 Address:  
 Pace Quote Reference:  
 Pace Project Manager:  
 Pace Profile #:

## Page:

**2** of **2**

## Section D

REGULATORY AGENCY  
 NPDES  GROUND WATER  DRINKING WATER  
 UST  RCRA  OTHER

## Section E

Site Location STATE:  
 Residual Chlorine (Y/N)

## Requested Analysis Filtered (Y/N)

VNL  
 Preservatives  
 Analysis Test

## Section F

Sample Project No./Lab I.D.  
**5072574**

## Section G

Sample Temp at Collection  
**36.16°C 026.**

## Section H

# of Containers  
**3**

## Section I

Uppreserved  
**X**

## Section J

Methanol  
**X**

## Section K

NaOH  
**X**

## Section L

HCl  
**X**

## Section M

HNO<sub>3</sub>  
**X**

## Section N

H<sub>2</sub>SO<sub>4</sub>  
**X**

## Section O

Na<sub>2</sub>S<sub>2</sub>O<sub>3</sub>  
**X**

## Section P

Other  
**X**

## Section Q

Composite End Grab  
**X**

## Section R

Composite Start  
**X**

## Section S

Matrix Codes MATRIX / CODE  
 Drinking Water DW  
 Water WWT  
 Waste Water WW  
 Product P  
 Soil/Solid SL  
 Oil OL  
 Wipe WP  
 Air AR  
 Tissue TS  
 Other OT

## Section T

Sample Type (G=GRAB C=COMP)  
 (see valid codes to left)

## Section U

Sample Temp at Collection  
**36.16°C 026.**

## Section V

Sample ID  
 (A-Z, 0-9, -, )  
 Sample IDs MUST BE UNIQUE

## Section W

Item #  
 1 **151p Bucle**  
 2  
 3  
 4  
 5  
 6  
 7  
 8  
 9  
 10  
 11  
 12

## Section X

Accepted By / Affiliation Date Time  
**A.J. 11/20/11 11:30**

## Section Y

Accepted By / Affiliation Date Time  
**Karen Tish 11/20/11 11:30**

## Section Z

Accepted By / Affiliation Date Time  
**11/20/11 11:30**

## Section AA

Additional Comments  
**None**

## Section BB

Sample Name and Signature  
 PRINT Name of SAMPLER: **Andy Danner**  
 SIGNATURE of SAMPLER: **Andy Danner**

## Section CC

Temp in °C  
 Received on **11/19/11**  
 Custody Control (Y/N)  
 Releasor (Y/N)  
 Samples intact (Y/N)

F-ALL-Q-020rev.07, 15-May-2007

\*Important Note: By signing this form you are accepting Pace's NET 30 day payment terms and agreeing to late charges of 1.5% per month for any invoices not paid within 30 days.

12:10  
 11/20/11 ORIGINAL

**Sample Condition Upon Receipt**

Pace Analytical

Client Name: Murphy & Assoc.

Project # 5672577

Courier:  FedEx  UPS  USPS  Client  Commercial  Pace Other \_\_\_\_\_

Tracking #: \_\_\_\_\_

Custody Seal on Cooler/Box Present:  yes  no Seals intact:  yes  no

Date/Time 5035A kits placed in freezer  
\_\_\_\_\_

Packing Material:  Bubble Wrap  Bubble Bags  None  Other FOAM

Thermometer Used 1 2 3 4 5 A B C D E Type of Ice:  Wet  Blue  None  Samples on ice, cooling process has begun

Cooler Temperature 3.5°C Ice Visible in Sample Containers:  yes  no

(Corrected, if applicable) Temp should be above freezing to 6°C Comments: Date and Initials of person examining contents: 11-20-12 / SCB

Chain of Custody Present:	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A	1.
Chain of Custody Filled Out:	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A	2.
Chain of Custody Relinquished:	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A	3.
Sampler Name & Signature on COC:	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A	4.
Short Hold Time Analysis (<72hr):	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A	5. <u>NITRATE</u>
Rush Turn Around Time Requested:	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No <input type="checkbox"/> N/A	6.
Containers Intact:	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A	7.
Sample Labels match COC: -Includes date/time/ID/Analysis	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A	8.
All containers needing acid/base pres. have been checked? exceptions: VOA, coliform, TOC, O&G	<input type="checkbox"/> Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> N/A	9. (Circle) HNO <sub>3</sub> H <sub>2</sub> SO <sub>4</sub> NaOH HCl
All containers needing preservation are found to be in compliance with EPA recommendation.	<input type="checkbox"/> Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> N/A	10. <u>Sample MMW-C-02D (1 vial)</u>
Headspace in VOA Vials (>6mm):	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A	11.
Trip Blank Present:	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A	12.
Trip Blank Custody Seals Present	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A	13.
Correct Containers Used:	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A	14.

**Project Manager Review:**

Samples Arrived within Hold Time:	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A	12.
Sufficient Volume:	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A	13.
Correct Containers Used:	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A	14.

**Client Notification/ Resolution:**

Field Data Required?

Y / N

Person Contacted: \_\_\_\_\_ Date/Time: \_\_\_\_\_

Comments/ Resolution: \_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_

Project Manager Review: J. Dwyer

Date: 11/20/12

# Sample Container Count

CLIENT: Munder + Assoc

COC PAGE 1 of 2  
COC ID# 1320286

Project # 50715A

PeaceAnalytical  
[www.peaceanalytical.com](http://www.peaceanalytical.com)

## Sample Line

Item	DG9H	AG1U	WGFU	AGOU	R 4 / 6	BP2N	BP2U	BP2S	BP3N	BP3U	BP3S	AG3S	AG1H	AG3U	Comments
1	3														
2															
3															
4															
5															
6															
7															
8															
9															
10															
11															
12															

## Container Codes

DG9H	40mL HCl amber vial	AGOU	100mL unpreserved amber glass	BP1N	1 liter HNO3 plastic	DG9P	40mL TSP amber vial
AG1U	1liter unpreserved amber glass	AG1H	1 liter HCl amber glass	BP1S	1 liter H <sub>2</sub> SO <sub>4</sub> plastic	DG9S	40mL H <sub>2</sub> SO <sub>4</sub> amber vial
WGFU	4oz. clear soil jar	AG1S	1 liter H <sub>2</sub> SO <sub>4</sub> amber glass	BP1U	1 liter unpreserved plastic	DG9T	40mL Na Thio amber vial
R	terra core kit	AG1T	1 liter Na Thiosulfate amber gl	BP1Z	1 liter NaOH, Zn, Ac	DG9U	40mL unpreserved amber vial
BP2N	500mL HNO3 plastic	AG2N	500mL HNO3 amber glass	BP2A	500mL NaOH, Asc Acid plastic	I	Wipe/Swab
BP2U	500mL unpreserved plastic	AG2S	500mL H <sub>2</sub> SO <sub>4</sub> amber glass	BP2O	500mL NaOH plastic	JGFU	4oz unpreserved amber wide
BP2S	500mL H <sub>2</sub> SO <sub>4</sub> plastic	AG2U	500mL unpreserved amber gla	BP2Z	500mL NaOH, Zn Ac	U	Summa Can
BP3N	250mL HNO3 plastic	AG3U	250mL unpreserved amber gla	AF	Air Filter	VG9H	40mL HCl clear vial
BP3U	250mL unpreserved plastic	BG1H	1 liter HCl clear glass	BP3C	250mL NaOH plastic	VGGT	40mL Na Thio. clear vial
BP3S	250mL H <sub>2</sub> SO <sub>4</sub> plastic	BG1S	1 liter H <sub>2</sub> SO <sub>4</sub> clear glass	BP3Z	250mL NaOH, Zn Ac plastic	VGGU	40mL unpreserved clear vial
AG3S	250mL H <sub>2</sub> SO <sub>4</sub> glass amber	BG1T	1 liter Na Thiosulfate clear gla	C	Air Cassette	VSG	Headspace septa vial & HCL
AG1S	1 liter H <sub>2</sub> SO <sub>4</sub> amber glass	BG1U	1 liter unpreserved glass	DG9B	40mL Na Bisulfate amber vial	WGFX	4oz wide jar w/hexane wipe
BP1U	1 liter unpreserved plastic	BP1A	1 liter NaOH, Asc Acid plastic	DG9M	40mL MeOH clear vial	ZPLC	Ziploc Bag

## Sample Container Count

CLIENT: Munder & Associates

COC PAGE 2 of 2  
COC ID# 1320287

Project # 5072571



### Sample Line

Item	DG9H	AG1U	WG FU	AG OU	R 4 / 6	BP2N	BP2U	BP2S	BP3N	BP3U	BP3S	AG3S	AG1H	Comments
1	3													
2														
3														
4														
5														
6														
7														
8														
9														
10														
11														
12														

### Container Codes

DG9H	40mL HCl amber vial	AG0U	100mL unpreserved amber glass	BP1N	1 liter HNO3 plastic	DG9P	40mL TSP amber vial
AG1U	1liter unpreserved amber glass	AG1H	1 liter HCl amber glass	BP1S	1 liter H2SO4 plastic	DG9S	40mL H2SO4 amber vial
WG FU	4oz clear soil jar	AG1S	1 liter H2SO4 amber glass	BP1U	1 liter unpreserved plastic	DG9T	40mL Na Thio amber vial
R terra core kit		AG1T	1 liter Na Thiosulfate amber gl	BP1Z	1 liter NaOH, Zn, Ac	DG9U	40mL unpreserved amber vial
BP2N	500mL HNO3 plastic	AG2N	500mL HNO3 amber glass	BP2A	500mL NaOH, Asc Acid plastic	I Wipe/Swab	
BP2U	500mL unpreserved plastic	AG2S	500mL H2SO4 amber glass	BP2O	500mL NaOH plastic	JGFU	4oz unpreserved amber wide
BP2S	500mL H2SO4 plastic	AG2U	500mL unpreserved amber gla	BP2Z	500mL NaOH, Zn Ac	U Summa Can	
BP3N	250mL HNO3 plastic	AG3U	250mL unpreserved amber gla	AF	Air Filter	VG9H	40mL HCl clear vial
BP3U	250mL unpreserved plastic	BG1H	1 liter HCl clear glass	BP3C	250mL NaOH plastic	VG9T	40mL Na Thio, clear vial
BP3S	250mL H2SO4 plastic	BG1S	1 liter H2SO4 clear glass	BP3Z	250mL NaOH, Zn Ac plastic	VG9U	40mL unpreserved clear vial
AG3S	250mL H2SO4 glass amber	BG1T	1 liter Na Thiosulfate clear gla	C	Air Cassettes	VSG	Headspace septa vial & HCl
AG1S	1 liter H2SO4 amber glass	BG1U	1 liter unpreserved glass	DG9B	40mL Na Bisulfate amber vial	WGFX	4oz wide jar w/hexane wipe
BP1U	1 liter unpreserved plastic	BP1A	1 liter NaOH, Asc Acid plastic	DG9M	40mL MeOH clear vial	ZPLC	Ziploc Bag

December 03, 2012

Mr. Mark Breting  
Mundell & Associates  
110 S. Downey Ave.  
Indianapolis, IN 46228

RE: Project: Michigan Plaza M01046  
Pace Project No.: 5072674

Dear Mr. Breting:

Enclosed are the analytical results for sample(s) received by the laboratory on November 21, 2012. The results relate only to the samples included in this report. Results reported herein conform to the most current TNI standards and the laboratory's Quality Assurance Manual, where applicable, unless otherwise noted in the body of the report.

If you have any questions concerning this report, please feel free to contact me.

Sincerely,



Tina Sayer

tina.sayer@pacelabs.com  
Project Manager

Enclosures



#### REPORT OF LABORATORY ANALYSIS

This report shall not be reproduced, except in full,  
without the written consent of Pace Analytical Services, Inc..

## CERTIFICATIONS

Project: Michigan Plaza M01046  
Pace Project No.: 5072674

---

### Indiana Certification IDs

7726 Moller Road, Indianapolis, IN 46268  
Illinois Certification #: 200074  
Indiana Certification #: C-49-06  
Kansas Certification #: E-10247  
Kentucky Certification #: 0042

Louisiana/NELAC Certification #: 04076  
Ohio VAP Certification #: CL0065  
Pennsylvania Certification #: 68-04991  
West Virginia Certification #: 330

---

## REPORT OF LABORATORY ANALYSIS

Page 2 of 13

This report shall not be reproduced, except in full,  
without the written consent of Pace Analytical Services, Inc..

## SAMPLE SUMMARY

Project: Michigan Plaza M01046  
 Pace Project No.: 5072674

Lab ID	Sample ID	Matrix	Date Collected	Date Received
5072674001	MMW-C-17D	Water	11/20/12 13:07	11/21/12 11:05
5072674002	MMW-P-14S	Water	11/20/12 14:22	11/21/12 11:05
5072674003	MMW-P-14D	Water	11/20/12 15:02	11/21/12 11:05

## REPORT OF LABORATORY ANALYSIS

Page 3 of 13

This report shall not be reproduced, except in full,  
 without the written consent of Pace Analytical Services, Inc..

## SAMPLE ANALYTE COUNT

Project: Michigan Plaza M01046  
 Pace Project No.: 5072674

Lab ID	Sample ID	Method	Analysts	Analytes Reported
5072674001	MMW-C-17D	EPA 8260	HEB	18
5072674002	MMW-P-14S	EPA 8260	HEB	18
5072674003	MMW-P-14D	EPA 8260	AMV	18

## REPORT OF LABORATORY ANALYSIS

Page 4 of 13

This report shall not be reproduced, except in full,  
 without the written consent of Pace Analytical Services, Inc..

## ANALYTICAL RESULTS

Project: Michigan Plaza M01046

Pace Project No.: 5072674

Sample: MMW-C-17D	Lab ID: 5072674001	Collected: 11/20/12 13:07	Received: 11/21/12 11:05	Matrix: Water				
Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
<b>8260 MSV</b>	Analytical Method: EPA 8260							
Benzene	ND	ug/L	5.0	1		11/30/12 09:56	71-43-2	
Carbon tetrachloride	ND	ug/L	5.0	1		11/30/12 09:56	56-23-5	
Chloroform	ND	ug/L	5.0	1		11/30/12 09:56	67-66-3	
1,1-Dichloroethene	ND	ug/L	5.0	1		11/30/12 09:56	75-35-4	
cis-1,2-Dichloroethene	ND	ug/L	5.0	1		11/30/12 09:56	156-59-2	
trans-1,2-Dichloroethene	ND	ug/L	5.0	1		11/30/12 09:56	156-60-5	
Ethylbenzene	ND	ug/L	5.0	1		11/30/12 09:56	100-41-4	
Methylene Chloride	ND	ug/L	5.0	1		11/30/12 09:56	75-09-2	
Naphthalene	ND	ug/L	5.0	1		11/30/12 09:56	91-20-3	
Tetrachloroethene	ND	ug/L	5.0	1		11/30/12 09:56	127-18-4	
Toluene	ND	ug/L	5.0	1		11/30/12 09:56	108-88-3	
1,1,1-Trichloroethane	ND	ug/L	5.0	1		11/30/12 09:56	71-55-6	
Trichloroethene	ND	ug/L	5.0	1		11/30/12 09:56	79-01-6	
Vinyl chloride	ND	ug/L	2.0	1		11/30/12 09:56	75-01-4	
Xylene (Total)	ND	ug/L	10.0	1		11/30/12 09:56	1330-20-7	
<b>Surrogates</b>								
Dibromofluoromethane (S)	99 %.		83-123	1		11/30/12 09:56	1868-53-7	
4-Bromofluorobenzene (S)	94 %.		72-125	1		11/30/12 09:56	460-00-4	
Toluene-d8 (S)	119 %.		81-114	1		11/30/12 09:56	2037-26-5	S3

## ANALYTICAL RESULTS

Project: Michigan Plaza M01046

Pace Project No.: 5072674

Sample: MMW-P-14S	Lab ID: 5072674002	Collected: 11/20/12 14:22	Received: 11/21/12 11:05	Matrix: Water				
Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
<b>8260 MSV</b>	Analytical Method: EPA 8260							
Benzene	ND	ug/L	5.0	1		11/30/12 11:50	71-43-2	
Carbon tetrachloride	ND	ug/L	5.0	1		11/30/12 11:50	56-23-5	
Chloroform	ND	ug/L	5.0	1		11/30/12 11:50	67-66-3	
1,1-Dichloroethene	ND	ug/L	5.0	1		11/30/12 11:50	75-35-4	
cis-1,2-Dichloroethene	ND	ug/L	5.0	1		11/30/12 11:50	156-59-2	
trans-1,2-Dichloroethene	ND	ug/L	5.0	1		11/30/12 11:50	156-60-5	
Ethylbenzene	ND	ug/L	5.0	1		11/30/12 11:50	100-41-4	
Methylene Chloride	ND	ug/L	5.0	1		11/30/12 11:50	75-09-2	
Naphthalene	ND	ug/L	5.0	1		11/30/12 11:50	91-20-3	
Tetrachloroethene	ND	ug/L	5.0	1		11/30/12 11:50	127-18-4	
Toluene	ND	ug/L	5.0	1		11/30/12 11:50	108-88-3	
1,1,1-Trichloroethane	ND	ug/L	5.0	1		11/30/12 11:50	71-55-6	
Trichloroethene	ND	ug/L	5.0	1		11/30/12 11:50	79-01-6	
Vinyl chloride	ND	ug/L	2.0	1		11/30/12 11:50	75-01-4	
Xylene (Total)	ND	ug/L	10.0	1		11/30/12 11:50	1330-20-7	
<b>Surrogates</b>								
Dibromofluoromethane (S)	104 %.		83-123	1		11/30/12 11:50	1868-53-7	
4-Bromofluorobenzene (S)	88 %.		72-125	1		11/30/12 11:50	460-00-4	
Toluene-d8 (S)	103 %.		81-114	1		11/30/12 11:50	2037-26-5	

## ANALYTICAL RESULTS

Project: Michigan Plaza M01046

Pace Project No.: 5072674

Sample: MMW-P-14D	Lab ID: 5072674003	Collected: 11/20/12 15:02	Received: 11/21/12 11:05	Matrix: Water				
Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
<b>8260 MSV</b>	Analytical Method: EPA 8260							
Benzene	ND	ug/L	5.0	1		12/01/12 09:27	71-43-2	
Carbon tetrachloride	ND	ug/L	5.0	1		12/01/12 09:27	56-23-5	
Chloroform	ND	ug/L	5.0	1		12/01/12 09:27	67-66-3	
1,1-Dichloroethene	ND	ug/L	5.0	1		12/01/12 09:27	75-35-4	
cis-1,2-Dichloroethene	ND	ug/L	5.0	1		12/01/12 09:27	156-59-2	
trans-1,2-Dichloroethene	ND	ug/L	5.0	1		12/01/12 09:27	156-60-5	
Ethylbenzene	ND	ug/L	5.0	1		12/01/12 09:27	100-41-4	
Methylene Chloride	ND	ug/L	5.0	1		12/01/12 09:27	75-09-2	
Naphthalene	ND	ug/L	5.0	1		12/01/12 09:27	91-20-3	
Tetrachloroethene	ND	ug/L	5.0	1		12/01/12 09:27	127-18-4	
Toluene	ND	ug/L	5.0	1		12/01/12 09:27	108-88-3	
1,1,1-Trichloroethane	ND	ug/L	5.0	1		12/01/12 09:27	71-55-6	
Trichloroethene	ND	ug/L	5.0	1		12/01/12 09:27	79-01-6	
Vinyl chloride	58.3	ug/L	2.0	1		12/01/12 09:27	75-01-4	
Xylene (Total)	ND	ug/L	10.0	1		12/01/12 09:27	1330-20-7	
<b>Surrogates</b>								
Dibromofluoromethane (S)	102 %.		83-123	1		12/01/12 09:27	1868-53-7	
4-Bromofluorobenzene (S)	94 %.		72-125	1		12/01/12 09:27	460-00-4	
Toluene-d8 (S)	106 %.		81-114	1		12/01/12 09:27	2037-26-5	



Pace Analytical Services, Inc.

1233 Dublin Road  
Columbus, OH 43215  
(614)486-5421

Pace Analytical Services, Inc.

7726 Moller Road  
Indianapolis, IN 46268  
(317)875-5894

## **QUALITY CONTROL DATA**

Project: Michigan Plaza M01046

Pace Project No.: 5072674

QC Batch: MSV/48190 Analysis Method: EPA 8260  
QC Batch Method: EPA 8260 Analysis Description: 8260 MSV  
Associated Lab Samples: 5072674001, 5072674002

METHOD BLANK: 837211 Matrix: Water

Associated Lab Samples: 5072674001, 5072674002

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
1,1,1-Trichloroethane	ug/L	ND	5.0	11/30/12 08:02	
1,1-Dichloroethene	ug/L	ND	5.0	11/30/12 08:02	
Benzene	ug/L	ND	5.0	11/30/12 08:02	
Carbon tetrachloride	ug/L	ND	5.0	11/30/12 08:02	
Chloroform	ug/L	ND	5.0	11/30/12 08:02	
cis-1,2-Dichloroethene	ug/L	ND	5.0	11/30/12 08:02	
Ethylbenzene	ug/L	ND	5.0	11/30/12 08:02	
Methylene Chloride	ug/L	ND	5.0	11/30/12 08:02	
Naphthalene	ug/L	ND	5.0	11/30/12 08:02	
Tetrachloroethene	ug/L	ND	5.0	11/30/12 08:02	
Toluene	ug/L	ND	5.0	11/30/12 08:02	
trans-1,2-Dichloroethene	ug/L	ND	5.0	11/30/12 08:02	
Trichloroethene	ug/L	ND	5.0	11/30/12 08:02	
Vinyl chloride	ug/L	ND	2.0	11/30/12 08:02	
Xylene (Total)	ug/L	ND	10.0	11/30/12 08:02	
4-Bromofluorobenzene (S)	%.	96	72-125	11/30/12 08:02	
Dibromofluoromethane (S)	%.	98	83-123	11/30/12 08:02	
Toluene-d8 (S)	%.	110	81-114	11/30/12 08:02	

LABORATORY CONTROL SAMPLE: 837212

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
1,1,1-Trichloroethane	ug/L	50	48.6	97	69-126	
1,1-Dichloroethene	ug/L	50	50.9	102	75-145	
Benzene	ug/L	50	48.8	98	76-123	
Carbon tetrachloride	ug/L	50	49.5	99	65-125	
Chloroform	ug/L	50	51.3	103	73-122	
cis-1,2-Dichloroethene	ug/L	50	47.6	95	79-129	
Ethylbenzene	ug/L	50	52.5	105	75-120	
Methylene Chloride	ug/L	50	49.5	99	61-138	
Naphthalene	ug/L	50	41.9	84	62-130	
Tetrachloroethene	ug/L	50	51.7	103	57-125	
Toluene	ug/L	50	53.1	106	72-124	
trans-1,2-Dichloroethene	ug/L	50	46.7	93	71-145	
Trichloroethene	ug/L	50	54.3	109	77-122	
Vinyl chloride	ug/L	50	45.2	90	61-146	
Xylene (Total)	ug/L	150	151	101	72-126	
4-Bromofluorobenzene (S)	%.			102	72-125	
Dibromofluoromethane (S)	%.			100	83-123	
Toluene-d8 (S)	%.			103	81-114	

Date: 12/03/2012 02:39 PM

## **REPORT OF LABORATORY ANALYSIS**

Page 8 of 13

This report shall not be reproduced, except in full,  
without the written consent of Pace Analytical Services, Inc.

## QUALITY CONTROL DATA

Project: Michigan Plaza M01046

Pace Project No.: 5072674

MATRIX SPIKE &amp; MATRIX SPIKE DUPLICATE: 837213                    837214

Parameter	Units	Result	MS	MSD	MS	MSD	MS	MSD	% Rec	% Rec	Max	
			Spike Conc.	Spike Conc.							RPD	RPD
1,1,1-Trichloroethane	ug/L	ND	50	50	44.2	46.5	88	93	37-136	5	20	
1,1-Dichloroethene	ug/L	ND	50	50	40.5	41.0	81	82	54-152	1	20	
Benzene	ug/L	ND	50	50	44.4	44.1	89	88	52-134	.7	20	
Carbon tetrachloride	ug/L	ND	50	50	42.8	45.2	86	90	26-136	6	20	
Chloroform	ug/L	ND	50	50	47.0	47.2	94	94	50-134	.4	20	
cis-1,2-Dichloroethene	ug/L	ND	50	50	43.6	45.0	87	90	48-145	3	20	
Ethylbenzene	ug/L	ND	50	50	31.6	29.3	63	59	29-132	8	20	
Methylene Chloride	ug/L	ND	50	50	46.0	47.1	92	94	47-141	2	20	
Naphthalene	ug/L	ND	50	50	39.4	32.8	79	66	40-124	18	20	
Tetrachloroethene	ug/L	ND	50	50	33.7	32.2	67	64	30-124	5	20	
Toluene	ug/L	ND	50	50	40.0	39.7	80	79	42-130	.9	20	
trans-1,2-Dichloroethene	ug/L	ND	50	50	41.7	41.9	83	84	48-144	.6	20	
Trichloroethene	ug/L	ND	50	50	41.4	42.5	83	85	44-130	3	20	
Vinyl chloride	ug/L	ND	50	50	50.7	48.2	101	96	45-159	5	20	
Xylene (Total)	ug/L	ND	150	150	94.4	83.4	63	56	29-131	12	20	
4-Bromofluorobenzene (S)	%.						100	101	72-125		20	
Dibromofluoromethane (S)	%.						102	104	83-123		20	1d
Toluene-d8 (S)	%.						103	101	81-114		20	

## QUALITY CONTROL DATA

Project: Michigan Plaza M01046

Pace Project No.: 5072674

QC Batch:	MSV/48249	Analysis Method:	EPA 8260
QC Batch Method:	EPA 8260	Analysis Description:	8260 MSV
Associated Lab Samples:	5072674003		

METHOD BLANK: 838266                                  Matrix: Water

Associated Lab Samples: 5072674003

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
1,1,1-Trichloroethane	ug/L	ND	5.0	12/01/12 03:44	
1,1-Dichloroethene	ug/L	ND	5.0	12/01/12 03:44	
Benzene	ug/L	ND	5.0	12/01/12 03:44	
Carbon tetrachloride	ug/L	ND	5.0	12/01/12 03:44	
Chloroform	ug/L	ND	5.0	12/01/12 03:44	
cis-1,2-Dichloroethene	ug/L	ND	5.0	12/01/12 03:44	
Ethylbenzene	ug/L	ND	5.0	12/01/12 03:44	
Methylene Chloride	ug/L	ND	5.0	12/01/12 03:44	
Naphthalene	ug/L	ND	5.0	12/01/12 03:44	
Tetrachloroethene	ug/L	ND	5.0	12/01/12 03:44	
Toluene	ug/L	ND	5.0	12/01/12 03:44	
trans-1,2-Dichloroethene	ug/L	ND	5.0	12/01/12 03:44	
Trichloroethene	ug/L	ND	5.0	12/01/12 03:44	
Vinyl chloride	ug/L	ND	2.0	12/01/12 03:44	
Xylene (Total)	ug/L	ND	10.0	12/01/12 03:44	
4-Bromofluorobenzene (S)	%.	94	72-125	12/01/12 03:44	
Dibromofluoromethane (S)	%.	102	83-123	12/01/12 03:44	
Toluene-d8 (S)	%.	105	81-114	12/01/12 03:44	

LABORATORY CONTROL SAMPLE: 838267

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
1,1,1-Trichloroethane	ug/L	50	51.6	103	69-126	
1,1-Dichloroethene	ug/L	50	41.8	84	75-145	
Benzene	ug/L	50	52.1	104	76-123	
Carbon tetrachloride	ug/L	50	53.7	107	65-125	
Chloroform	ug/L	50	52.5	105	73-122	
cis-1,2-Dichloroethene	ug/L	50	50.7	101	79-129	
Ethylbenzene	ug/L	50	57.7	115	75-120	
Methylene Chloride	ug/L	50	51.8	104	61-138	
Naphthalene	ug/L	50	49.1	98	62-130	
Tetrachloroethene	ug/L	50	57.0	114	57-125	
Toluene	ug/L	50	55.5	111	72-124	
trans-1,2-Dichloroethene	ug/L	50	49.3	99	71-145	
Trichloroethene	ug/L	50	58.4	117	77-122	
Vinyl chloride	ug/L	50	40.6	81	61-146	
Xylene (Total)	ug/L	150	167	111	72-126	
4-Bromofluorobenzene (S)	%.			109	72-125	
Dibromofluoromethane (S)	%.			100	83-123	
Toluene-d8 (S)	%.			103	81-114	

Date: 12/03/2012 02:39 PM

## REPORT OF LABORATORY ANALYSIS

Page 10 of 13

This report shall not be reproduced, except in full,  
without the written consent of Pace Analytical Services, Inc..

## QUALITY CONTROL DATA

Project: Michigan Plaza M01046

Pace Project No.: 5072674

Parameter	Units	5072895007 Result	MS	MSD	MS Result	MSD Result	MS	MSD	% Rec	% Rec Limits	Max	
			Spike Conc.	Spike Conc.			% Rec	% Rec	RPD		RPD	Qual
1,1,1-Trichloroethane	ug/L	ND	50	50	47.0	43.6	94	87	37-136	7	20	
1,1-Dichloroethene	ug/L	ND	50	50	38.8	38.9	78	78	54-152	.2	20	
Benzene	ug/L	ND	50	50	47.5	45.1	95	90	52-134	5	20	
Carbon tetrachloride	ug/L	ND	50	50	45.1	41.8	90	84	26-136	8	20	
Chloroform	ug/L	ND	50	50	47.6	45.9	95	92	50-134	4	20	
cis-1,2-Dichloroethene	ug/L	ND	50	50	44.4	43.1	89	86	48-145	3	20	
Ethylbenzene	ug/L	ND	50	50	30.7	28.5	53	49	29-132	7	20	
Methylene Chloride	ug/L	ND	50	50	50.6	49.3	101	99	47-141	3	20	
Naphthalene	ug/L	114	50	50	129	115	30	1	40-124	12	20	M0,R1
Tetrachloroethene	ug/L	ND	50	50	31.0	28.4	62	57	30-124	9	20	
Toluene	ug/L	ND	50	50	37.2	35.0	74	70	42-130	6	20	
trans-1,2-Dichloroethene	ug/L	ND	50	50	41.3	40.0	83	80	48-144	3	20	
Trichloroethene	ug/L	ND	50	50	41.0	38.9	82	78	44-130	5	20	
Vinyl chloride	ug/L	ND	50	50	38.5	36.5	77	73	45-159	5	20	
Xylene (Total)	ug/L	ND	150	150	87.0	80.4	54	50	29-131	8	20	
4-Bromofluorobenzene (S)	%.						98	99	72-125		20	
Dibromofluoromethane (S)	%.						103	102	83-123		20	
Toluene-d8 (S)	%.						102	106	81-114		20	

## QUALIFIERS

Project: Michigan Plaza M01046

Pace Project No.: 5072674

---

### DEFINITIONS

DF - Dilution Factor, if reported, represents the factor applied to the reported data due to changes in sample preparation, dilution of the sample aliquot, or moisture content.

ND - Not Detected at or above adjusted reporting limit.

J - Estimated concentration above the adjusted method detection limit and below the adjusted reporting limit.

MDL - Adjusted Method Detection Limit.

PRL - Pace Reporting Limit.

RL - Reporting Limit.

S - Surrogate

1,2-Diphenylhydrazine (8270 listed analyte) decomposes to Azobenzene.

Consistent with EPA guidelines, unrounded data are displayed and have been used to calculate % recovery and RPD values.

LCS(D) - Laboratory Control Sample (Duplicate)

MS(D) - Matrix Spike (Duplicate)

DUP - Sample Duplicate

RPD - Relative Percent Difference

NC - Not Calculable.

SG - Silica Gel - Clean-Up

U - Indicates the compound was analyzed for, but not detected.

N-Nitrosodiphenylamine decomposes and cannot be separated from Diphenylamine using Method 8270. The result reported for each analyte is a combined concentration.

Pace Analytical is TNI accredited. Contact your Pace PM for the current list of accredited analytes.

TNI - The NELAC Institute.

### ANALYTE QUALIFIERS

1d      Multiple compounds were outside the MS/MSD RPD control limits. HEB 11/30/12

M0      Matrix spike recovery and/or matrix spike duplicate recovery was outside laboratory control limits.

R1      RPD value was outside control limits.

S3      Surrogate recovery exceeded laboratory control limits. Analyte presence below reporting limits in associated samples.  
Results unaffected by high bias.

## QUALITY CONTROL DATA CROSS REFERENCE TABLE

Project: Michigan Plaza M01046  
 Pace Project No.: 5072674

Lab ID	Sample ID	QC Batch Method	QC Batch	Analytical Method	Analytical Batch
5072674001	MMW-C-17D	EPA 8260	MSV/48190		
5072674002	MMW-P-14S	EPA 8260	MSV/48190		
5072674003	MMW-P-14D	EPA 8260	MSV/48249		

# CHAIN-OF-CUSTODY / Analytical Request Document

The Chain-of-Custody is a LEGAL DOCUMENT. All relevant fields must be completed accurately.

Section A Required Client Information:		Section B Required Project Information:		Section C Invoice Information:	
Company: <u>Mundell &amp; Assoc</u>	Report To: <u>Mark Breitling</u>	Attention: <u>Mark Breitling</u>	Address:	NPDES	GROUND WATER
Address: <u>110 S. Downing Ave</u>	Copy To:	Company Name: <u>Mundell</u>	Phone Quote Reference:	<input type="checkbox"/>	DRINKING WATER
E-mail To: <u>Tnads</u> , TN 46210	Purchase Order No.:	Page Project:	RCRA	<input type="checkbox"/>	OTHER
Phone: <u>317-436-9060</u>	Project Name: <u>Michigan Dose</u>	Manager:	Site Location:	Residual Chlorine (Y/N)	
Requested Due Date/TAT:	Project Number: <u>Maloy4</u>	Page Profile #:	STATE:		
5072674					
5.1.1/AC, 3,826					
Analysis Test Y/N					
Preservatives					
# OF CONTAINERS					
SAMPLE TEMP AT COLLECTION (G=GRAB C=COMP)					
MATERIAL CODE (see valid codes to left)					
DATE TIME DATE TIME DATE TIME					
COLLECTED					
COMPOSITE ENDGRAB					
COMPOSITE START					
Drinking Water DW					
Water WT					
Waste Water WV					
Product P					
Soil/Solid SL					
Oil OL					
Wipe WP					
Air AR					
Tissue TS					
Other OT					
NaOH					
HCl					
HNO <sub>3</sub>					
H <sub>2</sub> SO <sub>4</sub>					
Urnpreserved					
Metathanol					
Na <sub>2</sub> S <sub>2</sub> O <sub>3</sub>					
Other					
#001					
#002					
#003					
Pace Project No./Lab I.D.					
5072674					
SAMPLE CONDITIONS					
ACCEPTED BY / AFFILIATION DATE TIME					
PRINT NAME OF SAMPLER: <u>A.J. Damney</u>					
SIGNATURE OF SAMPLER: <u>A.J. Damney</u>					
DATE Signed: <u>11-20-12</u> (MM/DD/YY):					
Temp In °C					
Received on <u>11/12/12</u> (MM/DD/YY):					
Sealed by <u>C</u> (Y/N)					
Customer <u>C</u> (Y/N)					
Samples intact (Y/N)					
F-ALL-Q-020rev.07, 15-May-2007					

\*Important Note: By signing this form you are accepting Pace's NET 30 day payment terms and agreeing to late charges of 1.5% per month for accounts not paid within 30 days.

## Sample Condition Upon Receipt

*Pace Analytical*Client Name: MundellProject # 5072674

Courier:  Fed Ex  UPS  USPS  Client  Commercial  Pace Other \_\_\_\_\_  
 Tracking #: \_\_\_\_\_

Custody Seal on Cooler/Box Present:  yes  no Seals intact:  yes  no

Date/Time 5035A kits placed in freezer  
\_\_\_\_\_  
*[Signature]*

Packing Material:  Bubble Wrap  Bubble Bags  None  Other

Thermometer Used 1 2 3 4 5 A B C D E Type of Ice: Wet Blue None  Samples on ice, cooling process has begun

Cooler Temperature 14°C Ice Visible in Sample Containers:  yes  no

Comments: \_\_\_\_\_ Date and Initials of person examining contents: 11/21/12 *[Signature]*  
Temp should be above freezing to 6°C

Chain of Custody Present:	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A	1.
Chain of Custody Filled Out:	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A	2.
Chain of Custody Relinquished:	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A	3.
Sampler Name & Signature on COC:	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A	4.
Short Hold Time Analysis (<72hr):	<input type="checkbox"/> Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> N/A	5.
Rush Turn Around Time Requested:	<input type="checkbox"/> Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> N/A	6.
Containers Intact:	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A	7.
Sample Labels match COC:	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A	8.
-Includes date/time/ID/Analysis	<i>[Signature]</i>	
All containers needing acid/base pres. have been checked?	<input type="checkbox"/> Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> N/A	9. (Circle) HNO3 H2SO4 NaOH HCl
exceptions: VOA, coliform, TOC, O&G		
All containers needing preservation are found to be in compliance with EPA recommendation.	<input type="checkbox"/> Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> N/A	
Headspace in VOA Vials (>6mm):	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No <input type="checkbox"/> N/A	10.
Trip Blank Present:	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No <input type="checkbox"/> N/A	11.
Trip Blank Custody Seals Present	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No <input type="checkbox"/> N/A	
Project Manager Review		
Samples Arrived within Hold Time:	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A	12.
Sufficient Volume:	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A	13.
Correct Containers Used:	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A	14.

Client Notification/ Resolution: Field Data Required? Y / N

Person Contacted: \_\_\_\_\_ Date/Time: \_\_\_\_\_

Comments/ Resolution: \_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_

*J. Sayl*

Project Manager Review:

Date: 11/21/12

# Sample Container Count

CLIENT: Munder

COC PAGE 1 of  
COC ID# 120274

Project # 5012074



## Sample Container Count

Sample Line	Item	DG9H	AG1U	WGFU	AG0U	R 4 / 6	BP2N	BP2U	BP2S	BP3N	BP3U	AG3S	AG1H	Comments
1		3												
2		3												
3		3												
4														
5														
6														
7														
8														
9														
10														
11														
12														

## Container Codes

DG9H	40mL HCL amber voa vial	AG0U	100mL unpreserved amber glass	BP1N	1 liter HNC3 plastic	DG9P	40mL TSP amber vial
AG1U	1liter unpreserved amber glass	AG1H	1 liter HCL amber glass	BP1S	1 liter H2SO4 plastic	DG9S	40mL H2SO4 amber vial
WGFU	4oz clear soil jar	AG1S	1 liter H2SO4 amber glass	BP1U	1 liter unpreserved plastic	DG9T	40mL Na Thio amber vial
R	terra core kit	AG1T	1 liter Na Thiosulfate amber gl	BP1Z	1 liter NaOH, Zn, Ac	DG9U	40mL unpreserved amber vial
BP2N	500mL HNO3 plastic	AG2N	500mL HNO3 amber glass	BP2A	500mL NaOH, Asc Acid plastic	I Wipe/Swab	
BP2U	500mL unpreserved plastic	AG2S	500mL H2SO4 amber glass	BP2O	500mL NaOH plastic	JG FU	4oz unpreserved amber wide
BP2S	500mL H2SO4 plastic	AG2U	500mL unpreserved amber gla	BP2Z	500mL NaOH, Zn Ac	U Summa Can	
BP3N	250mL HNO3 plastic	AG3U	250mL unpreserved amber gla	AF	Air Filter	VG9H	40mL HCL clear vial
BP3U	250mL unpreserved plastic	BG1H	1 liter HCL clear glass	BP3C	250mL NaOH plastic	VG9T	40mL Na Thio. clear vial
BP3S	250mL H2SO4 plastic	BG1S	1 liter H2SO4 clear glass	BP3Z	250mL NaOH, Zn Ac plastic	VG9U	40mL unpreserved clear vial
AG3S	250mL H2SO4 glass amber	BG1T	1 liter Na Thiosulfate clear gla	C Air Cassettes	VSG	Headspace septa vial & HCL	
AG1S	1 liter H2SO4 amber glass	BG1U	1 liter unpreserved glass	DG9B	40mL Na Bisulfate amber vial	WGFX	4oz wide jar w/hexane wipe
BP1U	1 liter unpreserved plastic	BP1A	1 liter NaOH, Asc Acid plastic	DG9M	40mL MeOH clear vial	ZPLC	Ziploc Bag

December 06, 2012

Mr. Mark Breting  
Mundell & Associates  
110 S. Downey Ave.  
Indianapolis, IN 46228

RE: Project: MI Plaza M01046  
Pace Project No.: 5072762

Dear Mr. Breting:

Enclosed are the analytical results for sample(s) received by the laboratory on November 27, 2012. The results relate only to the samples included in this report. Results reported herein conform to the most current TNI standards and the laboratory's Quality Assurance Manual, where applicable, unless otherwise noted in the body of the report.

If you have any questions concerning this report, please feel free to contact me.

Sincerely,



Tina Sayer

tina.sayer@pacelabs.com  
Project Manager

Enclosures



#### REPORT OF LABORATORY ANALYSIS

This report shall not be reproduced, except in full,  
without the written consent of Pace Analytical Services, Inc..

## CERTIFICATIONS

Project: MI Plaza M01046  
Pace Project No.: 5072762

---

### Indiana Certification IDs

7726 Moller Road, Indianapolis, IN 46268  
Illinois Certification #: 200074  
Indiana Certification #: C-49-06  
Kansas Certification #: E-10247  
Kentucky Certification #: 0042

Louisiana/NELAC Certification #: 04076  
Ohio VAP Certification #: CL0065  
Pennsylvania Certification #: 68-04991  
West Virginia Certification #: 330

---

## REPORT OF LABORATORY ANALYSIS

Page 2 of 14

This report shall not be reproduced, except in full,  
without the written consent of Pace Analytical Services, Inc..

## SAMPLE SUMMARY

Project: MI Plaza M01046

Pace Project No.: 5072762

Lab ID	Sample ID	Matrix	Date Collected	Date Received
5072762001	MMW-P-04	Water	11/21/12 12:11	11/27/12 11:13
5072762002	MMW-15D	Water	11/21/12 11:21	11/27/12 11:13
5072762003	MMW-15S	Water	11/21/12 10:17	11/27/12 11:13
5072762004	Trip Blank	Water	11/21/12 08:00	11/27/12 11:13

## REPORT OF LABORATORY ANALYSIS

Page 3 of 14

This report shall not be reproduced, except in full,  
without the written consent of Pace Analytical Services, Inc..

## SAMPLE ANALYTE COUNT

Project: MI Plaza M01046  
 Pace Project No.: 5072762

Lab ID	Sample ID	Method	Analysts	Analytes Reported
5072762001	MMW-P-04	EPA 8260	GRM	18
5072762002	MMW-15D	EPA 8260	AMV	18
5072762003	MMW-15S	EPA 8260	AMV	18
5072762004	Trip Blank	EPA 8260	AMV	18

## REPORT OF LABORATORY ANALYSIS

Page 4 of 14

This report shall not be reproduced, except in full,  
 without the written consent of Pace Analytical Services, Inc..

## ANALYTICAL RESULTS

Project: MI Plaza M01046

Pace Project No.: 5072762

Sample: MMW-P-04	Lab ID: 5072762001	Collected: 11/21/12 12:11	Received: 11/27/12 11:13	Matrix: Water				
Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
<b>8260 MSV</b>	Analytical Method: EPA 8260							
Benzene	ND	ug/L	5.0	1		12/04/12 08:38	71-43-2	
Carbon tetrachloride	ND	ug/L	5.0	1		12/04/12 08:38	56-23-5	
Chloroform	ND	ug/L	5.0	1		12/04/12 08:38	67-66-3	
1,1-Dichloroethene	ND	ug/L	5.0	1		12/04/12 08:38	75-35-4	
cis-1,2-Dichloroethene	ND	ug/L	5.0	1		12/04/12 08:38	156-59-2	
trans-1,2-Dichloroethene	ND	ug/L	5.0	1		12/04/12 08:38	156-60-5	
Ethylbenzene	ND	ug/L	5.0	1		12/04/12 08:38	100-41-4	
Methylene Chloride	ND	ug/L	5.0	1		12/04/12 08:38	75-09-2	
Naphthalene	ND	ug/L	5.0	1		12/04/12 08:38	91-20-3	
Tetrachloroethene	ND	ug/L	5.0	1		12/04/12 08:38	127-18-4	
Toluene	ND	ug/L	5.0	1		12/04/12 08:38	108-88-3	
1,1,1-Trichloroethane	ND	ug/L	5.0	1		12/04/12 08:38	71-55-6	
Trichloroethene	ND	ug/L	5.0	1		12/04/12 08:38	79-01-6	
Vinyl chloride	ND	ug/L	2.0	1		12/04/12 08:38	75-01-4	
Xylene (Total)	ND	ug/L	10.0	1		12/04/12 08:38	1330-20-7	
<b>Surrogates</b>								
Dibromofluoromethane (S)	108 %.		83-123	1		12/04/12 08:38	1868-53-7	
4-Bromofluorobenzene (S)	94 %.		72-125	1		12/04/12 08:38	460-00-4	
Toluene-d8 (S)	103 %.		81-114	1		12/04/12 08:38	2037-26-5	

## ANALYTICAL RESULTS

Project: MI Plaza M01046

Pace Project No.: 5072762

Sample: MMW-15D	Lab ID: 5072762002	Collected: 11/21/12 11:21	Received: 11/27/12 11:13	Matrix: Water				
Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
<b>8260 MSV</b>	Analytical Method: EPA 8260							
Benzene	ND	ug/L	5.0	1		12/01/12 12:00	71-43-2	
Carbon tetrachloride	ND	ug/L	5.0	1		12/01/12 12:00	56-23-5	
Chloroform	ND	ug/L	5.0	1		12/01/12 12:00	67-66-3	
1,1-Dichloroethene	ND	ug/L	5.0	1		12/01/12 12:00	75-35-4	
cis-1,2-Dichloroethene	<b>10.6</b>	ug/L	5.0	1		12/01/12 12:00	156-59-2	
trans-1,2-Dichloroethene	ND	ug/L	5.0	1		12/01/12 12:00	156-60-5	
Ethylbenzene	ND	ug/L	5.0	1		12/01/12 12:00	100-41-4	
Methylene Chloride	ND	ug/L	5.0	1		12/01/12 12:00	75-09-2	
Naphthalene	ND	ug/L	5.0	1		12/01/12 12:00	91-20-3	
Tetrachloroethene	ND	ug/L	5.0	1		12/01/12 12:00	127-18-4	
Toluene	ND	ug/L	5.0	1		12/01/12 12:00	108-88-3	
1,1,1-Trichloroethane	ND	ug/L	5.0	1		12/01/12 12:00	71-55-6	
Trichloroethene	ND	ug/L	5.0	1		12/01/12 12:00	79-01-6	
Vinyl chloride	ND	ug/L	2.0	1		12/01/12 12:00	75-01-4	
Xylene (Total)	ND	ug/L	10.0	1		12/01/12 12:00	1330-20-7	
<b>Surrogates</b>								
Dibromofluoromethane (S)	99 %.		83-123	1		12/01/12 12:00	1868-53-7	
4-Bromofluorobenzene (S)	91 %.		72-125	1		12/01/12 12:00	460-00-4	
Toluene-d8 (S)	105 %.		81-114	1		12/01/12 12:00	2037-26-5	

## ANALYTICAL RESULTS

Project: MI Plaza M01046

Pace Project No.: 5072762

Sample: MMW-15S	Lab ID: 5072762003	Collected: 11/21/12 10:17	Received: 11/27/12 11:13	Matrix: Water				
Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
<b>8260 MSV</b>	Analytical Method: EPA 8260							
Benzene	ND	ug/L	5.0	1		12/01/12 12:38	71-43-2	
Carbon tetrachloride	ND	ug/L	5.0	1		12/01/12 12:38	56-23-5	
Chloroform	ND	ug/L	5.0	1		12/01/12 12:38	67-66-3	
1,1-Dichloroethene	ND	ug/L	5.0	1		12/01/12 12:38	75-35-4	
cis-1,2-Dichloroethene	ND	ug/L	5.0	1		12/01/12 12:38	156-59-2	
trans-1,2-Dichloroethene	ND	ug/L	5.0	1		12/01/12 12:38	156-60-5	
Ethylbenzene	ND	ug/L	5.0	1		12/01/12 12:38	100-41-4	
Methylene Chloride	ND	ug/L	5.0	1		12/01/12 12:38	75-09-2	
Naphthalene	ND	ug/L	5.0	1		12/01/12 12:38	91-20-3	
Tetrachloroethene	ND	ug/L	5.0	1		12/01/12 12:38	127-18-4	
Toluene	ND	ug/L	5.0	1		12/01/12 12:38	108-88-3	
1,1,1-Trichloroethane	ND	ug/L	5.0	1		12/01/12 12:38	71-55-6	
Trichloroethene	ND	ug/L	5.0	1		12/01/12 12:38	79-01-6	
Vinyl chloride	ND	ug/L	2.0	1		12/01/12 12:38	75-01-4	
Xylene (Total)	ND	ug/L	10.0	1		12/01/12 12:38	1330-20-7	
<b>Surrogates</b>								
Dibromofluoromethane (S)	99 %.		83-123	1		12/01/12 12:38	1868-53-7	
4-Bromofluorobenzene (S)	90 %.		72-125	1		12/01/12 12:38	460-00-4	
Toluene-d8 (S)	106 %.		81-114	1		12/01/12 12:38	2037-26-5	

## ANALYTICAL RESULTS

Project: MI Plaza M01046

Pace Project No.: 5072762

Sample: Trip Blank	Lab ID: 5072762004	Collected: 11/21/12 08:00	Received: 11/27/12 11:13	Matrix: Water				
Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
<b>8260 MSV</b>	Analytical Method: EPA 8260							
Benzene	ND	ug/L	5.0	1		12/01/12 13:16	71-43-2	
Carbon tetrachloride	ND	ug/L	5.0	1		12/01/12 13:16	56-23-5	
Chloroform	ND	ug/L	5.0	1		12/01/12 13:16	67-66-3	
1,1-Dichloroethene	ND	ug/L	5.0	1		12/01/12 13:16	75-35-4	
cis-1,2-Dichloroethene	ND	ug/L	5.0	1		12/01/12 13:16	156-59-2	
trans-1,2-Dichloroethene	ND	ug/L	5.0	1		12/01/12 13:16	156-60-5	
Ethylbenzene	ND	ug/L	5.0	1		12/01/12 13:16	100-41-4	
Methylene Chloride	ND	ug/L	5.0	1		12/01/12 13:16	75-09-2	
Naphthalene	ND	ug/L	5.0	1		12/01/12 13:16	91-20-3	
Tetrachloroethene	ND	ug/L	5.0	1		12/01/12 13:16	127-18-4	
Toluene	ND	ug/L	5.0	1		12/01/12 13:16	108-88-3	
1,1,1-Trichloroethane	ND	ug/L	5.0	1		12/01/12 13:16	71-55-6	
Trichloroethene	ND	ug/L	5.0	1		12/01/12 13:16	79-01-6	
Vinyl chloride	ND	ug/L	2.0	1		12/01/12 13:16	75-01-4	
Xylene (Total)	ND	ug/L	10.0	1		12/01/12 13:16	1330-20-7	
<b>Surrogates</b>								
Dibromofluoromethane (S)	102 %.		83-123	1		12/01/12 13:16	1868-53-7	
4-Bromofluorobenzene (S)	94 %.		72-125	1		12/01/12 13:16	460-00-4	
Toluene-d8 (S)	104 %.		81-114	1		12/01/12 13:16	2037-26-5	

## QUALITY CONTROL DATA

Project: MI Plaza M01046

Pace Project No.: 5072762

QC Batch: MSV/48249 Analysis Method: EPA 8260

QC Batch Method: EPA 8260 Analysis Description: 8260 MSV

Associated Lab Samples: 5072762002, 5072762003, 5072762004

METHOD BLANK: 838266 Matrix: Water

Associated Lab Samples: 5072762002, 5072762003, 5072762004

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
1,1,1-Trichloroethane	ug/L	ND	5.0	12/01/12 03:44	
1,1-Dichloroethene	ug/L	ND	5.0	12/01/12 03:44	
Benzene	ug/L	ND	5.0	12/01/12 03:44	
Carbon tetrachloride	ug/L	ND	5.0	12/01/12 03:44	
Chloroform	ug/L	ND	5.0	12/01/12 03:44	
cis-1,2-Dichloroethene	ug/L	ND	5.0	12/01/12 03:44	
Ethylbenzene	ug/L	ND	5.0	12/01/12 03:44	
Methylene Chloride	ug/L	ND	5.0	12/01/12 03:44	
Naphthalene	ug/L	ND	5.0	12/01/12 03:44	
Tetrachloroethene	ug/L	ND	5.0	12/01/12 03:44	
Toluene	ug/L	ND	5.0	12/01/12 03:44	
trans-1,2-Dichloroethene	ug/L	ND	5.0	12/01/12 03:44	
Trichloroethene	ug/L	ND	5.0	12/01/12 03:44	
Vinyl chloride	ug/L	ND	2.0	12/01/12 03:44	
Xylene (Total)	ug/L	ND	10.0	12/01/12 03:44	
4-Bromofluorobenzene (S)	%.	94	72-125	12/01/12 03:44	
Dibromofluoromethane (S)	%.	102	83-123	12/01/12 03:44	
Toluene-d8 (S)	%.	105	81-114	12/01/12 03:44	

LABORATORY CONTROL SAMPLE: 838267

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
1,1,1-Trichloroethane	ug/L	50	51.6	103	69-126	
1,1-Dichloroethene	ug/L	50	41.8	84	75-145	
Benzene	ug/L	50	52.1	104	76-123	
Carbon tetrachloride	ug/L	50	53.7	107	65-125	
Chloroform	ug/L	50	52.5	105	73-122	
cis-1,2-Dichloroethene	ug/L	50	50.7	101	79-129	
Ethylbenzene	ug/L	50	57.7	115	75-120	
Methylene Chloride	ug/L	50	51.8	104	61-138	
Naphthalene	ug/L	50	49.1	98	62-130	
Tetrachloroethene	ug/L	50	57.0	114	57-125	
Toluene	ug/L	50	55.5	111	72-124	
trans-1,2-Dichloroethene	ug/L	50	49.3	99	71-145	
Trichloroethene	ug/L	50	58.4	117	77-122	
Vinyl chloride	ug/L	50	40.6	81	61-146	
Xylene (Total)	ug/L	150	167	111	72-126	
4-Bromofluorobenzene (S)	%.			109	72-125	
Dibromofluoromethane (S)	%.			100	83-123	
Toluene-d8 (S)	%.			103	81-114	

Date: 12/06/2012 02:45 PM

## REPORT OF LABORATORY ANALYSIS

Page 9 of 14

This report shall not be reproduced, except in full,  
without the written consent of Pace Analytical Services, Inc..

## QUALITY CONTROL DATA

Project: MI Plaza M01046

Pace Project No.: 5072762

Parameter	Units	5072895007 Result	MS	MSD	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec	Max		
			Spike Conc.	Spike Conc.						RPD	RPD	Qual
1,1,1-Trichloroethane	ug/L	ND	50	50	47.0	43.6	94	87	37-136	7	20	
1,1-Dichloroethene	ug/L	ND	50	50	38.8	38.9	78	78	54-152	.2	20	
Benzene	ug/L	ND	50	50	47.5	45.1	95	90	52-134	5	20	
Carbon tetrachloride	ug/L	ND	50	50	45.1	41.8	90	84	26-136	8	20	
Chloroform	ug/L	ND	50	50	47.6	45.9	95	92	50-134	4	20	
cis-1,2-Dichloroethene	ug/L	ND	50	50	44.4	43.1	89	86	48-145	3	20	
Ethylbenzene	ug/L	ND	50	50	30.7	28.5	53	49	29-132	7	20	
Methylene Chloride	ug/L	ND	50	50	50.6	49.3	101	99	47-141	3	20	
Naphthalene	ug/L	114	50	50	129	115	30	1	40-124	12	20	M0,R1
Tetrachloroethene	ug/L	ND	50	50	31.0	28.4	62	57	30-124	9	20	
Toluene	ug/L	ND	50	50	37.2	35.0	74	70	42-130	6	20	
trans-1,2-Dichloroethene	ug/L	ND	50	50	41.3	40.0	83	80	48-144	3	20	
Trichloroethene	ug/L	ND	50	50	41.0	38.9	82	78	44-130	5	20	
Vinyl chloride	ug/L	ND	50	50	38.5	36.5	77	73	45-159	5	20	
Xylene (Total)	ug/L	ND	150	150	87.0	80.4	54	50	29-131	8	20	
4-Bromofluorobenzene (S)	%.						98	99	72-125		20	
Dibromofluoromethane (S)	%.						103	102	83-123		20	
Toluene-d8 (S)	%.						102	106	81-114		20	

## QUALITY CONTROL DATA

Project: MI Plaza M01046

Pace Project No.: 5072762

QC Batch:	MSV/48289	Analysis Method:	EPA 8260
QC Batch Method:	EPA 8260	Analysis Description:	8260 MSV
Associated Lab Samples:	5072762001		

METHOD BLANK: 839077                                  Matrix: Water

Associated Lab Samples: 5072762001

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
1,1,1-Trichloroethane	ug/L	ND	5.0	12/04/12 02:55	
1,1-Dichloroethene	ug/L	ND	5.0	12/04/12 02:55	
Benzene	ug/L	ND	5.0	12/04/12 02:55	
Carbon tetrachloride	ug/L	ND	5.0	12/04/12 02:55	
Chloroform	ug/L	ND	5.0	12/04/12 02:55	
cis-1,2-Dichloroethene	ug/L	ND	5.0	12/04/12 02:55	
Ethylbenzene	ug/L	ND	5.0	12/04/12 02:55	
Methylene Chloride	ug/L	ND	5.0	12/04/12 02:55	
Naphthalene	ug/L	ND	5.0	12/04/12 02:55	
Tetrachloroethene	ug/L	ND	5.0	12/04/12 02:55	
Toluene	ug/L	ND	5.0	12/04/12 02:55	
trans-1,2-Dichloroethene	ug/L	ND	5.0	12/04/12 02:55	
Trichloroethene	ug/L	ND	5.0	12/04/12 02:55	
Vinyl chloride	ug/L	ND	2.0	12/04/12 02:55	
Xylene (Total)	ug/L	ND	10.0	12/04/12 02:55	
4-Bromofluorobenzene (S)	%.	101	72-125	12/04/12 02:55	
Dibromofluoromethane (S)	%.	105	83-123	12/04/12 02:55	
Toluene-d8 (S)	%.	103	81-114	12/04/12 02:55	

LABORATORY CONTROL SAMPLE: 839078

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
1,1,1-Trichloroethane	ug/L	50	48.5	97	69-126	
1,1-Dichloroethene	ug/L	50	44.8	90	75-145	
Benzene	ug/L	50	50.5	101	76-123	
Carbon tetrachloride	ug/L	50	48.7	97	65-125	
Chloroform	ug/L	50	46.0	92	73-122	
cis-1,2-Dichloroethene	ug/L	50	47.0	94	79-129	
Ethylbenzene	ug/L	50	50.5	101	75-120	
Methylene Chloride	ug/L	50	45.5	91	61-138	
Naphthalene	ug/L	50	40.2	80	62-130	
Tetrachloroethene	ug/L	50	49.7	99	57-125	
Toluene	ug/L	50	51.9	104	72-124	
trans-1,2-Dichloroethene	ug/L	50	44.1	88	71-145	
Trichloroethene	ug/L	50	48.3	97	77-122	
Vinyl chloride	ug/L	50	43.7	87	61-146	
Xylene (Total)	ug/L	150	149	100	72-126	
4-Bromofluorobenzene (S)	%.			98	72-125	
Dibromofluoromethane (S)	%.			97	83-123	
Toluene-d8 (S)	%.			101	81-114	

Date: 12/06/2012 02:45 PM

## REPORT OF LABORATORY ANALYSIS

Page 11 of 14

This report shall not be reproduced, except in full,  
without the written consent of Pace Analytical Services, Inc..

## QUALITY CONTROL DATA

Project: MI Plaza M01046

Pace Project No.: 5072762

Parameter	Units	Result	MS	MSD	MS	MSD	MS	MSD	% Rec	% Rec	Max		
			Spike Conc.	Spike Conc.							RPD	RPD	Qual
1,1,1-Trichloroethane	ug/L	ND	50	50	41.7	44.5	83	89	37-136	7	20		
1,1-Dichloroethene	ug/L	ND	50	50	40.7	41.5	81	83	54-152	2	20		
Benzene	ug/L	ND	50	50	40.8	42.7	82	85	52-134	5	20		
Carbon tetrachloride	ug/L	ND	50	50	42.3	45.4	85	91	26-136	7	20		
Chloroform	ug/L	ND	50	50	44.4	47.6	89	95	50-134	7	20		
cis-1,2-Dichloroethene	ug/L	ND	50	50	44.5	47.4	89	95	48-145	6	20		
Ethylbenzene	ug/L	ND	50	50	28.3	27.4	57	55	29-132	3	20		
Methylene Chloride	ug/L	ND	50	50	48.3	63.5	97	127	47-141	27	20	R1	
Naphthalene	ug/L	ND	50	50	31.4	31.0	63	62	40-124	1	20		
Tetrachloroethene	ug/L	ND	50	50	30.5	29.8	61	60	30-124	3	20		
Toluene	ug/L	ND	50	50	38.4	36.0	77	72	42-130	6	20		
trans-1,2-Dichloroethene	ug/L	ND	50	50	40.0	42.2	80	84	48-144	5	20		
Trichloroethene	ug/L	ND	50	50	38.9	37.3	78	75	44-130	4	20		
Vinyl chloride	ug/L	ND	50	50	30.7	33.5	61	67	45-159	9	20		
Xylene (Total)	ug/L	ND	150	150	82.4	77.6	55	52	29-131	6	20		
4-Bromofluorobenzene (S)	%.						103	100	72-125		20		
Dibromofluoromethane (S)	%.							96	98	83-123		20	
Toluene-d8 (S)	%.						105	103	81-114		20		

## QUALIFIERS

Project: MI Plaza M01046

Pace Project No.: 5072762

---

### DEFINITIONS

DF - Dilution Factor, if reported, represents the factor applied to the reported data due to changes in sample preparation, dilution of the sample aliquot, or moisture content.

ND - Not Detected at or above adjusted reporting limit.

J - Estimated concentration above the adjusted method detection limit and below the adjusted reporting limit.

MDL - Adjusted Method Detection Limit.

PRL - Pace Reporting Limit.

RL - Reporting Limit.

S - Surrogate

1,2-Diphenylhydrazine (8270 listed analyte) decomposes to Azobenzene.

Consistent with EPA guidelines, unrounded data are displayed and have been used to calculate % recovery and RPD values.

LCS(D) - Laboratory Control Sample (Duplicate)

MS(D) - Matrix Spike (Duplicate)

DUP - Sample Duplicate

RPD - Relative Percent Difference

NC - Not Calculable.

SG - Silica Gel - Clean-Up

U - Indicates the compound was analyzed for, but not detected.

N-Nitrosodiphenylamine decomposes and cannot be separated from Diphenylamine using Method 8270. The result reported for each analyte is a combined concentration.

Pace Analytical is TNI accredited. Contact your Pace PM for the current list of accredited analytes.

TNI - The NELAC Institute.

### ANALYTE QUALIFIERS

M0      Matrix spike recovery and/or matrix spike duplicate recovery was outside laboratory control limits.

R1      RPD value was outside control limits.

## QUALITY CONTROL DATA CROSS REFERENCE TABLE

Project: MI Plaza M01046  
 Pace Project No.: 5072762

Lab ID	Sample ID	QC Batch Method	QC Batch	Analytical Method	Analytical Batch
5072762001	MMW-P-04	EPA 8260	MSV/48289		
5072762002	MMW-15D	EPA 8260	MSV/48249		
5072762003	MMW-15S	EPA 8260	MSV/48249		
5072762004	Trip Blank	EPA 8260	MSV/48249		



# CHAIN-OF-CUSTODY / Analytical Request Document

The Chain-of-Custody is a LEGAL DOCUMENT. All relevant fields must be completed accurately.

Section A Required Client Information:		Section B Required Project Information:		Section C Invoice Information:																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																						
Company: <b>Mundell &amp; Associates</b>	Report To: <b>Mark Bretting</b>	Address: <b>110 S. Downing Ave</b>	Copy To:	Attention: <b>Marcie Shue</b>	Phone: <b>770-557-972</b>																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																					
Address: <b>Fair Oaks, TN</b>	Purchase Order No.:	Address:	Reference:	Project Name: <b>M. Plaza</b>	Manager:																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																					
Email To:	Project Number:	Pace Quote:	Pace Project:	Pace Profile #:																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																						
Phone:	Requested Due Date/TAT:	Site Location:	STATE:	Residual Chlorine (Y/N)																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																						
Fax:	<b>5/21/2012</b>																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																									
Section D Required Client Information																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																										
<table border="1"> <thead> <tr> <th rowspan="2">SAMPLE ID (A-Z, 0-9, -)</th> <th rowspan="2">Matrix Codes MATRIX / CODE</th> <th colspan="2">COLLECTED</th> <th rowspan="2">Preservatives</th> <th rowspan="2"># OF CONTAINERS</th> </tr> <tr> <th>COMPOSITE ENDRAS</th> <th>COMPOSITE START</th> </tr> </thead> <tbody> <tr> <td>1</td> <td>DW</td> <td></td> <td></td> <td></td> <td>SAMPLE TEMP AT COLLECTION</td> </tr> <tr> <td>2</td> <td>WT</td> <td></td> <td></td> <td></td> <td></td> </tr> <tr> <td>3</td> <td>WW</td> <td></td> <td></td> <td></td> <td></td> </tr> <tr> <td>4</td> <td>P</td> <td></td> <td></td> <td></td> <td></td> </tr> <tr> <td>5</td> <td>SI</td> <td></td> <td></td> <td></td> <td></td> </tr> <tr> <td>6</td> <td>OL</td> <td></td> <td></td> <td></td> <td></td> </tr> <tr> <td>7</td> <td>WP</td> <td></td> <td></td> <td></td> <td></td> </tr> <tr> <td>8</td> <td>AR</td> <td></td> <td></td> <td></td> <td></td> </tr> <tr> <td>9</td> <td>TS</td> <td></td> <td></td> <td></td> <td></td> </tr> <tr> <td>10</td> <td>OT</td> <td></td> <td></td> <td></td> <td></td> </tr> <tr> <td>11</td> <td>Wipe</td> <td></td> <td></td> <td></td> <td></td> </tr> <tr> <td>12</td> <td>Air</td> <td></td> <td></td> <td></td> <td></td> </tr> <tr> <td>13</td> <td>Tissue</td> <td></td> <td></td> <td></td> <td></td> </tr> <tr> <td>14</td> <td>Other</td> <td></td> <td></td> <td></td> <td></td> </tr> <tr> <td>15</td> <td></td> <td></td> <td></td> <td></td> <td></td> </tr> <tr> <td>16</td> <td></td> <td></td> <td></td> <td></td> <td></td> </tr> <tr> <td>17</td> <td></td> <td></td> <td></td> <td></td> <td></td> </tr> <tr> <td>18</td> <td></td> <td></td> <td></td> <td></td> <td></td> </tr> <tr> <td>19</td> <td></td> <td></td> <td></td> <td></td> <td></td> </tr> <tr> <td>20</td> <td></td> <td></td> <td></td> <td></td> <td></td> </tr> <tr> <td>21</td> <td></td> <td></td> <td></td> <td></td> <td></td> </tr> <tr> <td>22</td> <td></td> <td></td> <td></td> <td></td> <td></td> </tr> <tr> <td>23</td> <td></td> <td></td> <td></td> <td></td> <td></td> </tr> <tr> <td>24</td> <td></td> <td></td> <td></td> <td></td> <td></td> </tr> <tr> <td>25</td> <td></td> <td></td> <td></td> <td></td> <td></td> </tr> <tr> <td>26</td> <td></td> <td></td> <td></td> <td></td> <td></td> </tr> <tr> <td>27</td> <td></td> <td></td> <td></td> <td></td> <td></td> </tr> <tr> <td>28</td> <td></td> <td></td> <td></td> <td></td> <td></td> </tr> <tr> <td>29</td> <td></td> <td></td> <td></td> <td></td> <td></td> </tr> <tr> <td>30</td> <td></td> <td></td> <td></td> <td></td> <td></td> </tr> <tr> <td>31</td> <td></td> <td></td> <td></td> <td></td> <td></td> </tr> <tr> <td>32</td> <td></td> <td></td> <td></td> <td></td> <td></td> </tr> <tr> <td>33</td> <td></td> <td></td> <td></td> <td></td> <td></td> </tr> <tr> <td>34</td> <td></td> <td></td> <td></td> <td></td> <td></td> </tr> <tr> <td>35</td> <td></td> <td></td> <td></td> <td></td> <td></td> </tr> <tr> <td>36</td> <td></td> <td></td> <td></td> <td></td> <td></td> </tr> <tr> <td>37</td> <td></td> <td></td> <td></td> <td></td> <td></td> </tr> <tr> <td>38</td> <td></td> <td></td> <td></td> <td></td> <td></td> </tr> <tr> <td>39</td> <td></td> <td></td> <td></td> <td></td> <td></td> </tr> <tr> <td>40</td> <td></td> <td></td> <td></td> <td></td> <td></td> </tr> <tr> <td>41</td> <td></td> <td></td> <td></td> <td></td> <td></td> </tr> <tr> <td>42</td> <td></td> <td></td> <td></td> <td></td> <td></td> </tr> <tr> <td>43</td> <td></td> <td></td> <td></td> <td></td> <td></td> </tr> <tr> <td>44</td> <td></td> <td></td> <td></td> <td></td> <td></td> </tr> <tr> <td>45</td> <td></td> <td></td> <td></td> <td></td> <td></td> </tr> <tr> <td>46</td> <td></td> <td></td> <td></td> <td></td> <td></td> </tr> <tr> <td>47</td> <td></td> <td></td> <td></td> <td></td> <td></td> </tr> <tr> <td>48</td> <td></td> <td></td> <td></td> <td></td> <td></td> </tr> <tr> <td>49</td> <td></td> <td></td> <td></td> <td></td> <td></td> </tr> <tr> <td>50</td> <td></td> <td></td> <td></td> <td></td> <td></td> </tr> <tr> <td>51</td> <td></td> <td></td> <td></td> <td></td> <td></td> </tr> <tr> <td>52</td> <td></td> <td></td> <td></td> <td></td> <td></td> </tr> <tr> <td>53</td> <td></td> <td></td> <td></td> <td></td> <td></td> </tr> <tr> <td>54</td> <td></td> <td></td> <td></td> <td></td> <td></td> </tr> <tr> <td>55</td> <td></td> <td></td> <td></td> <td></td> <td></td> </tr> <tr> <td>56</td> <td></td> <td></td> <td></td> <td></td> <td></td> </tr> <tr> <td>57</td> <td></td> <td></td> <td></td> <td></td> <td></td> </tr> <tr> <td>58</td> <td></td> <td></td> <td></td> <td></td> <td></td> </tr> <tr> <td>59</td> <td></td> <td></td> <td></td> <td></td> <td></td> </tr> <tr> <td>60</td> <td></td> <td></td> <td></td> <td></td> <td></td> </tr> <tr> <td>61</td> <td></td> <td></td> <td></td> <td></td> <td></td> </tr> <tr> <td>62</td> <td></td> <td></td> <td></td> <td></td> <td></td> </tr> <tr> <td>63</td> <td></td> <td></td> <td></td> <td></td> <td></td> </tr> <tr> <td>64</td> <td></td> <td></td> <td></td> <td></td> <td></td> </tr> <tr> <td>65</td> <td></td> <td></td> <td></td> <td></td> <td></td> </tr> <tr> <td>66</td> <td></td> <td></td> <td></td> <td></td> <td></td> </tr> <tr> <td>67</td> <td></td> <td></td> <td></td> <td></td> <td></td> </tr> <tr> <td>68</td> <td></td> <td></td> <td></td> <td></td> <td></td> </tr> <tr> <td>69</td> <td></td> <td></td> <td></td> <td></td> <td></td> </tr> <tr> <td>70</td> <td></td> <td></td> <td></td> <td></td> <td></td> </tr> <tr> <td>71</td> <td></td> <td></td> <td></td> <td></td> <td></td> </tr> <tr> <td>72</td> <td></td> <td></td> <td></td> <td></td> <td></td> </tr> <tr> <td>73</td> <td></td> <td></td> <td></td> <td></td> <td></td> </tr> <tr> <td>74</td> <td></td> <td></td> <td></td> <td></td> <td></td> </tr> <tr> <td>75</td> <td></td> <td></td> <td></td> <td></td> <td></td> </tr> <tr> <td>76</td> <td></td> <td></td> <td></td> <td></td> <td></td> </tr> <tr> <td>77</td> <td></td> <td></td> <td></td> <td></td> <td></td> </tr> <tr> <td>78</td> <td></td> <td></td> <td></td> <td></td> <td></td> </tr> <tr> <td>79</td> <td></td> <td></td> <td></td> <td></td> <td></td> </tr> <tr> <td>80</td> <td></td> <td></td> <td></td> <td></td> <td></td> </tr> <tr> <td>81</td> <td></td> <td></td> <td></td> <td></td> <td></td> </tr> <tr> <td>82</td> <td></td> <td></td> <td></td> <td></td> <td></td> </tr> <tr> <td>83</td> <td></td> <td></td> <td></td> <td></td> <td></td> </tr> <tr> <td>84</td> <td></td> <td></td> <td></td> <td></td> <td></td> </tr> <tr> <td>85</td> <td></td> <td></td> <td></td> <td></td> <td></td> </tr> <tr> <td>86</td> <td></td> <td></td> <td></td> <td></td> <td></td> </tr> <tr> <td>87</td> <td></td> <td></td> <td></td> <td></td> <td></td> </tr> <tr> <td>88</td> <td></td> <td></td> <td></td> <td></td> <td></td> </tr> <tr> <td>89</td> <td></td> <td></td> <td></td> <td></td> <td></td> </tr> <tr> <td>90</td> <td></td> <td></td> <td></td> <td></td> <td></td> </tr> <tr> <td>91</td> <td></td> <td></td> <td></td> <td></td> <td></td> </tr> <tr> <td>92</td> <td></td> <td></td> <td></td> <td></td> <td></td> </tr> <tr> <td>93</td> <td></td> <td></td> <td></td> <td></td> <td></td> </tr> <tr> <td>94</td> <td></td> <td></td> <td></td> <td></td> <td></td> </tr> <tr> <td>95</td> <td></td> <td></td> <td></td> <td></td> <td></td> </tr> <tr> <td>96</td> <td></td> <td></td> <td></td> <td></td> <td></td> </tr> <tr> <td>97</td> <td></td> <td></td> <td></td> <td></td> <td></td> </tr> <tr> <td>98</td> <td></td> <td></td> <td></td> <td></td> <td></td> </tr> <tr> <td>99</td> <td></td> <td></td> <td></td> <td></td> <td></td> </tr> <tr> <td>100</td> <td></td> <td></td> <td></td> <td></td> <td></td> </tr> <tr> <td>101</td> <td></td> <td></td> <td></td> <td></td> <td></td> </tr> <tr> <td>102</td> <td></td> <td></td> <td></td> <td></td> <td></td> </tr> <tr> <td>103</td> <td></td> <td></td> <td></td> <td></td> <td></td> </tr> <tr> <td>104</td> <td></td> <td></td> <td></td> <td></td> <td></td> </tr> <tr> <td>105</td> <td></td> <td></td> <td></td> <td></td> <td></td> </tr> <tr> <td>106</td> <td></td> <td></td> <td></td> <td></td> <td></td> </tr> <tr> <td>107</td> <td></td> <td></td> <td></td> <td></td> <td></td> </tr> <tr> <td>108</td> <td></td> <td></td> <td></td> <td></td> <td></td> </tr> <tr> <td>109</td> <td></td> <td></td> <td></td> <td></td> <td></td> </tr> <tr> <td>110</td> <td></td> <td></td> <td></td> <td></td> <td></td> </tr> <tr> <td>111</td> <td></td> <td></td> <td></td> <td></td> <td></td> </tr> <tr> <td>112</td> <td></td> <td></td> <td></td> <td></td> <td></td> </tr> <tr> <td>113</td> <td></td> <td></td> <td></td> <td></td> <td></td> </tr> <tr> <td>114</td> <td></td> <td></td> <td></td> <td></td> <td></td> </tr> <tr> <td>115</td> <td></td> <td></td> <td></td> <td></td> <td></td> </tr> <tr> <td>116</td> <td></td> <td></td> <td></td> <td></td> <td></td> </tr> <tr> <td>117</td> <td></td> <td></td> <td></td> <td></td> <td></td> </tr> <tr> <td>118</td> <td></td> <td></td> <td></td> <td></td> <td></td> </tr> <tr> <td>119</td> <td></td> <td></td> <td></td> <td></td> <td></td> </tr> <tr> <td>120</td> <td></td> <td></td> <td></td> <td></td> <td></td> </tr> <tr> <td>121</td> <td></td> <td></td> <td></td> <td></td> <td></td> </tr> <tr> <td>122</td> <td></td> <td></td> <td></td> <td></td> <td></td> </tr> <tr> <td>123</td> <td></td> <td></td> <td></td> <td></td> <td></td> </tr> <tr> <td>124</td> <td></td> <td></td> <td></td> <td></td> <td></td> </tr> <tr> <td>125</td> <td></td> <td></td> <td></td> <td></td> <td></td> </tr> <tr> <td>126</td> <td></td> <td></td> <td></td> <td></td> <td></td> </tr> <tr> <td>127</td> <td></td> <td></td> <td></td> <td></td> <td></td> </tr> <tr> <td>128</td> <td></td> <td></td> <td></td> <td></td> <td></td> </tr> <tr> <td>129</td> <td></td> <td></td> <td></td> <td></td> <td></td> </tr> <tr> <td>130</td> <td></td> <td></td> <td></td> <td></td> <td></td> </tr> <tr> <td>131</td> <td></td> <td></td> <td></td> <td></td> <td></td> </tr> <tr> <td>132</td> <td></td> <td></td> <td></td> <td></td> <td></td> </tr> <tr> <td>133</td> <td></td> <td></td> <td></td> <td></td> <td></td> </tr> <tr> <td>134</td> <td></td> <td></td> <td></td> <td></td> <td></td> </tr> <tr> <td>135</td> <td></td> <td></td> <td></td> <td></td> <td></td> </tr> <tr> <td>136</td> <td></td> <td></td> <td></td> <td></td> <td></td> </tr> <tr> <td>137</td> <td></td> <td></td> <td></td> <td></td> <td></td> </tr> <tr> <td>138</td> <td></td> <td></td> <td></td> <td></td> <td></td> </tr> <tr> <td>139</td> <td></td> <td></td> <td></td> <td></td> <td></td> </tr> <tr> <td>140</td> <td></td> <td></td> <td></td> <td></td> <td></td> </tr> <tr> <td>141</td> <td></td> <td></td> <td></td> <td></td> <td></td> </tr> <tr> <td>142</td> <td></td> <td></td> <td></td> <td></td> <td></td> </tr> <tr> <td>143</td> <td></td> <td></td> <td></td> <td></td> <td></td> </tr> <tr> <td>144</td> <td></td> <td></td> <td></td> <td></td> <td></td> </tr> <tr> <td>145</td> <td></td> <td></td> <td></td> <td></td> <td></td> </tr> <tr> <td>146</td> <td></td> <td></td> <td></td> <td></td> <td></td> </tr> <tr> <td>147</td> <td></td> <td></td> <td></td> <td></td> <td></td> </tr> <tr> <td>148</td> <td></td> <td></td> <td></td> <td></td> <td></td> </tr> <tr> <td>149</td> <td></td> <td></td> <td></td> <td></td> <td></td> </tr> <tr> <td>150</td> <td></td> <td></td> <td></td> <td></td> <td></td> </tr> <tr> <td>151</td> <td></td> <td></td> <td></td> <td></td> <td></td> </tr> <tr> <td>152</td> <td></td> <td></td> <td></td> <td></td> <td></td> </tr> <tr> <td>153</td> <td></td> <td></td> <td></td> <td></td> <td></td> </tr> <tr> <td>154</td> <td></td> <td></td> <td></td> <td></td> <td></td> </tr> <tr> <td>155</td> <td></td> <td></td> <td></td> <td></td> <td></td> </tr> <tr> <td>156</td> <td></td> <td></td> <td></td> <td></td> <td></td> </tr> <tr> <td>157</td> <td></td> <td></td> <td></td> <td></td> <td></td> </tr> <tr> <td>158</td> <td></td> <td></td> <td></td> <td></td> <td></td> </tr> <tr> <td>159</td> <td></td> <td></td> <td></td> <td></td> <td></td> </tr> <tr> <td>160</td> <td></td> <td></td> <td></td> <td></td> <td></td> </tr> <tr> <td>161</td> <td></td> <td></td> <td></td> <td></td> <td></td> </tr> <tr> <td>162</td> <td></td> <td></td> <td></td> <td></td> <td></td> </tr> <tr> <td>163</td> <td></td> <td></td> <td></td> <td></td> <td></td> </tr> <tr> <td>164</td> <td></td> <td></td> <td></td> <td></td> <td></td> </tr> <tr> <td>165</td> <td></td> <td></td> <td></td> <td></td> <td></td> </tr> <tr> <td>166</td> <td></td> <td></td> <td></td> <td></td> <td></td> </tr> <tr> <td>167</td> <td></td> <td></td> <td></td> <td></td> <td></td> </tr> <tr> <td>168</td> <td></td> <td></td> <td></td> <td></td> <td></td> </tr> <tr> <td>169</td> <td></td> <td></td> <td></td> <td></td> <td></td> </tr> <tr> <td>170</td> <td></td> <td></td> <td></td> <td></td> <td></td> </tr> <tr> <td>171</td> <td></td> <td></td> <td></td> <td></td> <td></td> </tr> <tr> <td>172</td> <td></td> <td></td> <td></td> <td></td> <td></td> </tr> <tr> <td>173</td> <td></td> <td></td> <td></td> <td></td> <td></td> </tr> <tr> <td>174</td> <td></td> <td></td> <td></td> <td></td> <td></td> </tr> <tr> <td>175</td> <td></td> <td></td> <td></td> <td></td> <td></td> </tr> <tr> <td>176</td> <td></td> <td></td> <td></td> <td></td> <td></td> </tr> <tr> <td>177</td> <td></td> <td></td> <td></td> <td></td> <td></td> </tr> <tr> <td>178</td> <td></td> <td></td> <td></td> <td></td> <td></td> </tr> <tr> <td>179</td> <td></td> <td></td> <td></td> <td></td> <td></td> </tr> <tr> <td>180</td> <td></td> <td></td> <td></td> <td></td> <td></td> </tr> <tr> <td>181</td> <td></td> <td></td> <td></td> <td></td> <td></td> </tr> <tr> <td>182</td> <td></td> <td></td> <td></td> <td></td> <td></td> </tr> <tr> <td>183</td> <td></td> <td></td> <td></td> <td></td> <td></td> </tr> <tr> <td>184</td> <td></td> <td></td> <td></td> <td></td> <td></td> </tr> <tr> <td>185</td> <td></td> <td></td> <td></td> <td></td> <td></td> </tr> <tr> <td>186</td> <td></td> <td></td> <td></td> <td></td> <td></td> </tr> <tr> <td>187</td> <td></td> <td></td> <td></td> <td></td> <td></td> </tr> <tr> <td>188</td> <td></td> <td></td> <td></td> <td></td> <td></td> </tr> <tr> <td>189</td> <td></td> <td></td> <td></td> <td></td> <td></td> </tr> <tr> <td>190</td> <td></td> <td></td> <td></td> <td></td> <td></td> </tr> <tr> <td>191</td> <td></td> <td></td> <td></td> <td></td> <td></td> </tr> <tr> <td>192</td> <td></td> <td></td> <td></td> <td></td> <td></td> </tr> <tr> <td>193</td> <td></td> <td></td> <td></td> <td></td> <td></td> </tr> <tr> <td>194</td> <td></td> <td></td> <td></td> <td></td> <td></td> </tr> <tr> <td>195</td> <td></td> <td></td> <td></td> <td></td> <td></td> </tr> <tr> <td>196</td> <td></td> <td></td> <td></td> <td></td> <td></td> </tr> <tr> <td>197</td> <td></td> <td></td> <td></td> <td></td> <td></td> </tr> <tr> <td>198</td> <td></td> <td></td> <td></td> <td></td> <td></td> </tr> <tr> <td>199</td> <td></td> <td></td> <td></td> <td></td> <td></td> </tr> <tr> <td>200</td> <td></td> <td></td> <td></td> <td></td> <td></td> </tr> <tr> <td>201</td> <td></td> <td></td> <td></td> <td></td> <td></td> </tr> <tr> <td>202</td> <td></td> <td></td> <td></td> <td></td> <td></td> </tr> <tr> <td>203</td> <td></td> <td></td> <td></td> <td></td> <td></td> </tr> <tr> <td>204</td> <td></td> <td></td> <td></td> <td></td> <td></td> </tr> <tr> <td>205</td> <td></td> <td></td> <td></td> <td></td> <td></td> </tr> <tr> <td>206</td> <td></td> <td></td> <td></td> <td></td> <td></td> </tr> <tr> <td>207</td> <td></td> <td></td> <td></td> <td></td> <td></td> </tr> <tr> <td>208</td> <td></td> <td></td> <td></td> <td></td> <td></td> </tr> <tr> <td>209</td> <td></td> <td></td> <td></td> <td></td> <td></td> </tr> <tr> <td>210</td> <td></td> <td></td> <td></td> <td></td> <td></td> </tr> <tr> <td>211</td> <td></td> <td></td> <td></td> <td></td> <td></td> </tr> <tr> <td>212</td> <td></td> <td></td> <td></td> <td></td> <td></td> </tr> <tr> <td>213</td> <td></td> <td></td> <td></td> <td></td> <td></td> </tr> <tr> <td>214</td> <td></td> <td></td> <td></td> <td></td> <td></td> </tr> <tr> <td>215</td> <td></td> <td></td> <td></td> <td></td> <td></td> </tr> <tr> <td>216</td> <td></td> <td></td> <td></td> <td></td> <td></td> </tr> <tr> <td>217</td> <td></td> <td></td> <td></td> <td></td> <td></td> </tr> <tr> <td>218</td> <td></td> <td></td> <td></td> <td></td> <td></td> </tr> <tr> <td>219</td> <td></td> <td></td> <td></td> <td></td> <td></td> </tr> <tr> <td>220</td> <td></td> <td></td> <td></td> <td></td> <td></td> </tr> <tr> <td>221</td> <td></td> <td></td> <td></td> <td></td> <td></td> </tr> <tr> <td>222</td> <td></td> <td></td> <td></td> <td></td> <td></td> </tr> <tr> <td>223</td> <td></td> <td></td> <td></td> <td></td> <td></td> </tr> <tr> <td>224</td> <td></td> <td></td> <td></td> <td></td> <td></td> </tr> <tr> <td>225</td> <td></td> <td></td> <td></td> <td></td> <td></td> </tr> <tr> <td>226</td> <td></td> <td></td> <td></td> <td></td> <td></td> </tr> <tr> <td>227</td> <td></td> <td></td> <td></td> <td></td> <td></td> </tr> <tr> <td>228</td> <td></td> <td></td> <td></td> <td></td> <td></td> </tr> <tr> <td>229</td> <td></td> <td></td> <td></td> <td></td> <td></td> </tr> <tr> <td>230</td> <td></td> <td></td> <td></td> <td></td> <td></td> </tr> <tr> <td>231</td> <td></td> <td></td> <td></td> <td></td> <td></td> </tr> <tr> <td>232</td> <td></td> <td></td> <td></td> <td></td> <td></td> </tr> <tr> <td>233</td> <td></td> <td></td> <td></td> <td></td> <td></td> </tr> <tr> <td>234</td> <td></td> <td></td> <td></td> <td></td> <td></td> </tr> <tr> <td>235</td> <td></td> <td></td> <td></td> <td></td> <td></td> </tr> <tr> <td>236</td> <td></td> <td></td> <td></td> <td></td> <td></td> </tr> <tr> <td>237</td> <td></td> <td></td> <td></td> <td></td> <td></td> </tr> <tr> <td>238</td> <td></td> <td></td> <td></td> <td></td> <td></td> </tr> <tr> <td>239</td> <td></td> <td></td> <td></td> <td></td> <td></td> </tr> <tr> <td>240</td> <td></td> <td></td> <td></td> <td></td> <td></td> </tr> <tr> <td>241</td> <td></td> <td></td> <td></td> <td></td> <td></td> </tr> <tr> <td>242</td> <td></td> <td></td> <td></td> <td></td> <td></td> </tr> <tr> <td>243</td> <td></td> <td></td> <td></td> <td></td> <td></td> </tr> <tr> <td>244</td> <td></td> <td></td> <td></td> <td></td> <td></td> </tr> <tr> <td>245</td> <td></td> <td></td> <td></td> <td></td> <td></td> </tr> <tr> <td>246</td> <td></td> <td></td> <td></td> <td></td> <td></td> </tr> <tr> <td>247</td> <td></td> <td></td> <td></td> <td></td> <td></td> </tr> <tr> <td>248</td> <td></td> <td></td> <td></td> <td></td> <td></td> </tr> <tr> <td>249</td> <td></td> <td></td> <td></td> <td></td> <td></td> </tr> <tr> <td>250</td> <td></td> <td></td> <td></td> <td></td> <td></td> </tr> <tr> <td>251</td> <td></td> <td></td> <td></td> <td></td> <td></td> </tr> <tr> <td>252</td> <td></td> <td></td> <td></td> <td></td> <td></td> </tr> <tr> <td>253</td> <td></td> <td></td> <td></td> <td></td> <td></td> </tr> <tr> <td>254</td> <td></td> <td></td> <td></td> <td></td> <td></td> </tr> <tr> <td>255</td> <td></td> <td></td> <td></td> <td></td> <td></td> </tr> <tr> <td>256</td> <td></td> <td></td> <td></td> <td></td> <td></td> </tr> <tr> <td>257</td> <td></td> <td></td> <td></td> <td></td> <td></td> </tr> <tr> <td>258</td> <td></td> <td></td> <td></td> <td></td> <td></td> </tr> <tr> <td>259</td> <td></td> <td></td> <td></td> <td></td> <td></td> </tr> <tr> <td>260</td> <td></td> <td></td> <td></td> <td></td> <td></td> </tr> <tr> <td>261</td> <td></td> <td></td> <td></td> <td></td> <td></td> </tr> <tr> <td>262</td> <td></td> <td></td> <td></td> <td></td> <td></td> </tr> <tr> <td>263</td> <td></td> <td></td> <td></td> <td></td> <td></td> </tr> <tr> <td>264</td> <td></td> <td></td> <td></td> <td></td> <td></td> </tr> <tr> <td>265</td> <td></td> <td></td> <td></td> <td></td> <td></td> </tr> <tr> <td>266</td> <td></td> <td></td> <td></td> <td></td> <td></td> </tr> <tr> <td>267</td> <td></td> <td></td> <td></td> <td></td> <td></td> </tr> <tr> <td>268</td> <td></td> <td></td> <td></td> <td></td> <td></td> </tr> <tr> <td>269</td> <td></td> <td></td> <td></td> <td></td> <td></td> </tr> <tr> <td>270</td> <td></td> <td></td> <td></td> <td></td> <td></td> </tr> <tr> <td>271</td> <td></td> <td></td> <td></td> <td></td> <td></td> </tr> <tr> <td>272</td> <td></td> <td></td> <td></td> <td></td> <td></td> </tr> <tr> <td>273</td> <td></td> <td></td> <td></td> <td></td> <td></td> </tr> <tr> <td>274</td> <td></td> <td></td> <td></td> <td></td> <td></td> </tr> <tr> <td>275</td> <td></td> <td></td> <td></td> <td></td> <td></td> </tr> <tr> <td>276</td> <td></td> <td></td> <td></td> <td></td> <td></td> </tr> <tr> <td>277</td> <td></td> <td></td> <td></td> <td></td> <td></td> </tr> <tr> <td>278</td> <td></td> <td></td> <td></td> <td></td> <td></td> </tr> <tr> <td>279</td> <td></td> <td></td> <td></td> <td></td> <td></td> </tr> <tr> <td>280</td> <td></td> <td></td> <td></td> <td></td> <td></td> </tr> <tr> <td>281</td> <td></td> <td></td> <td></td> <td></td> <td></td> </tr> <tr> <td>282</td> <td></td> <td></td> <td></td> <td></td> <td></td> </tr> <tr> <td>283</td> <td></td> <td></td> <td></td> <td></td> <td></td> </tr> <tr> <td>284</td> <td></td> <td></td> <td></td> <td></td> <td></td> </tr> <tr> <td>285</td> <td></td> <td></td> <td></td> <td></td> <td></td> </tr> <tr> <td>286</td> <td></td> <td></td> <td></td> <td></td> <td></td> </tr> <tr> <td>287</td> <td></td> <td></td> <td></td> <td></td> <td></td> </tr> <tr> <td>288</td> <td></td> <td></td> <td></td> <td></td> <td></td> </tr> <tr> <td>289</td> <td></td> <td></td> <td></td> <td></td> <td></td> </tr> <tr> <td>290</td> <td></td> <td></td> <td></td> <td></td> <td></td> </tr> <tr> <td>291</td> <td></td> <td></td> <td></td> <td></td> <td></td> </tr> <tr> <td>292</td> <td></td> <td></td> <td></td> <td></td> <td></td> </tr> <tr> <td>293</td> <td></td> <td></td> <td></td> <td></td> <td></td> </tr> <tr> <td>294</td> <td></td> <td></td> <td></td> <td></td> <td></td> </tr> <tr> <td>295</td> <td></td> <td></td> <td></td> <td></td> <td></td> </tr> <tr> <td>296</td> <td></td> <td></td> <td></td> <td></td> <td></td> </tr> <tr> <td>297</td> <td></td> <td></td> <td></td> <td></td> <td></td> </tr> <tr> <td>298</td> <td></td> <td></td> <td></td> <td></td> <td></td> </tr> <tr> <td>299</td> <td></td> <td></td> <td></td> <td></td> <td></td> </tr> <tr> <td>300</td> <td></td> <td></td> <td></td> <td></td> <td></td> </tr> <tr> <td>301</td> <td></td> <td></td> <td></td> <td></td> <td></td> </tr> <tr> <td>302</td> <td></td> <td></td> <td></td> <td></td> <td></td> </tr> <tr> <td>303</td> <td></td> <td></td> <td></td> <td></td> <td></td> </tr> <tr> <td>304</td> <td></td> <td></td> <td></td> <td></td> <td></td> </tr> <tr> <td>305</td> <td></td> <td></td> <td></td> <td></td> <td></td> </tr> <tr> <td>306</td> <td></td> <td></td> <td></td> <td></td> <td></td> </tr> <tr> <td>307</td> <td></td> <td></td> <td></td> <td></td> <td></td> </tr> <tr> <td>308</td> <td></td> <td></td> <td></td> <td></td> <td></td> </tr> <tr> <td>309</td> <td></td> <td></td> <td></td> <td></td> <td></td> </tr> <tr> <td>310</td> <td></td> <td></td> <td></td> <td></td> <td></td> </tr> <tr> <td>311</td> <td></td> <td></td> <td></td> <td></td> <td></td> </tr> <tr> <td>312</td> <td></td> <td></td> <td></td> <td></td> <td></td> </tr> <tr> <td>313</td> <td></td> <td></td> <td></td> <td></td> <td></td> </tr> <tr> <td>314</td> <td></td> <td></td> <td></td> <td></td> <td></td> </tr> <tr> <td>315</td> <td></td> <td></td> <td></td> <td></td> <td></td> </tr> <tr> <td>316</td> <td></td> <td></td> <td></td> <td></td> <td></td> </tr> <tr> <td>317</td> <td></td> <td></td> <td></td> <td></td> <td></td> </tr> <tr> <td>318</td> <td></td> <td></td> <td></td> <td></td> <td></td> </tr> <tr> <td>319</td> <td></td> <td></td> <td></td> <td></td> <td></td> </tr> <tr> <td>320</td> <td></td> <td></td> <td></td> <td></td> <td></td> </tr> <tr> <td>321</td> <td></td> <td></td> <td></td> <td></td> <td></td> </tr> <tr> <td>322</td> <td></td> <td></td> <td></td> <td></td> <td></td> </tr> <tr> <td>323</td> <td></td> <td></td> <td></td> <td></td> <td></td> </tr> <tr> <td>324</td> <td></td> <td></td> <td></td> <td></td> <td></td> </tr> <tr> <td>325</td> <td></td> <td></td> <td></td> <td></td> <td></td> </tr> <tr> <td>326</td> <td></td> <td></td> <td></td> <td></td> <td></td> </tr> <tr> <td>327</td> <td></td> <td></td> <td></td> <td></td> <td></td> </tr> <tr> <td>328</td> <td></td> <td>&lt;/td</td></tr></tbody></table>						SAMPLE ID (A-Z, 0-9, -)	Matrix Codes MATRIX / CODE	COLLECTED		Preservatives	# OF CONTAINERS	COMPOSITE ENDRAS	COMPOSITE START	1	DW				SAMPLE TEMP AT COLLECTION	2	WT					3	WW					4	P					5	SI					6	OL					7	WP					8	AR					9	TS					10	OT					11	Wipe					12	Air					13	Tissue					14	Other					15						16						17						18						19						20						21						22						23						24						25						26						27						28						29						30						31						32						33						34						35						36						37						38						39						40						41						42						43						44						45						46						47						48						49						50						51						52						53						54						55						56						57						58						59						60						61						62						63						64						65						66						67						68						69						70						71						72						73						74						75						76						77						78						79						80						81						82						83						84						85						86						87						88						89						90						91						92						93						94						95						96						97						98						99						100						101						102						103						104						105						106						107						108						109						110						111						112						113						114						115						116						117						118						119						120						121						122						123						124						125						126						127						128						129						130						131						132						133						134						135						136						137						138						139						140						141						142						143						144						145						146						147						148						149						150						151						152						153						154						155						156						157						158						159						160						161						162						163						164						165						166						167						168						169						170						171						172						173						174						175						176						177						178						179						180						181						182						183						184						185						186						187						188						189						190						191						192						193						194						195						196						197						198						199						200						201						202						203						204						205						206						207						208						209						210						211						212						213						214						215						216						217						218						219						220						221						222						223						224						225						226						227						228						229						230						231						232						233						234						235						236						237						238						239						240						241						242						243						244						245						246						247						248						249						250						251						252						253						254						255						256						257						258						259						260						261						262						263						264						265						266						267						268						269						270						271						272						273						274						275						276						277						278						279						280						281						282						283						284						285						286						287						288						289						290						291						292						293						294						295						296						297						298						299						300						301						302						303						304						305						306						307						308						309						310						311						312						313						314						315						316						317						318						319						320						321						322						323						324						325						326						327						328		</td
SAMPLE ID (A-Z, 0-9, -)	Matrix Codes MATRIX / CODE	COLLECTED		Preservatives	# OF CONTAINERS																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																					
		COMPOSITE ENDRAS	COMPOSITE START																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																							
1	DW				SAMPLE TEMP AT COLLECTION																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																					
2	WT																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																									
3	WW																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																									
4	P																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																									
5	SI																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																									
6	OL																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																									
7	WP																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																									
8	AR																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																									
9	TS																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																									
10	OT																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																									
11	Wipe																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																									
12	Air																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																									
13	Tissue																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																									
14	Other																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																									
15																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																										
16																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																										
17																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																										
18																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																										
19																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																										
20																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																										
21																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																										
22																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																										
23																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																										
24																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																										
25																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																										
26																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																										
27																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																										
28																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																										
29																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																										
30																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																										
31																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																										
32																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																										
33																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																										
34																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																										
35																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																										
36																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																										
37																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																										
38																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																										
39																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																										
40																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																										
41																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																										
42																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																										
43																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																										
44																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																										
45																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																										
46																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																										
47																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																										
48																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																										
49																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																										
50																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																										
51																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																										
52																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																										
53																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																										
54																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																										
55																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																										
56																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																										
57																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																										
58																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																										
59																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																										
60																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																										
61																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																										
62																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																										
63																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																										
64																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																										
65																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																										
66																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																										
67																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																										
68																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																										
69																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																										
70																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																										
71																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																										
72																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																										
73																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																										
74																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																										
75																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																										
76																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																										
77																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																										
78																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																										
79																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																										
80																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																										
81																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																										
82																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																										
83																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																										
84																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																										
85																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																										
86																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																										
87																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																										
88																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																										
89																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																										
90																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																										
91																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																										
92																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																										
93																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																										
94																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																										
95																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																										
96																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																										
97																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																										
98																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																										
99																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																										
100																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																										
101																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																										
102																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																										
103																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																										
104																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																										
105																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																										
106																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																										
107																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																										
108																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																										
109																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																										
110																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																										
111																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																										
112																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																										
113																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																										
114																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																										
115																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																										
116																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																										
117																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																										
118																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																										
119																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																										
120																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																										
121																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																										
122																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																										
123																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																										
124																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																										
125																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																										
126																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																										
127																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																										
128																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																										
129																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																										
130																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																										
131																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																										
132																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																										
133																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																										
134																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																										
135																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																										
136																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																										
137																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																										
138																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																										
139																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																										
140																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																										
141																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																										
142																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																										
143																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																										
144																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																										
145																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																										
146																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																										
147																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																										
148																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																										
149																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																										
150																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																										
151																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																										
152																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																										
153																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																										
154																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																										
155																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																										
156																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																										
157																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																										
158																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																										
159																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																										
160																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																										
161																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																										
162																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																										
163																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																										
164																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																										
165																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																										
166																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																										
167																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																										
168																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																										
169																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																										
170																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																										
171																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																										
172																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																										
173																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																										
174																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																										
175																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																										
176																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																										
177																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																										
178																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																										
179																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																										
180																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																										
181																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																										
182																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																										
183																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																										
184																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																										
185																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																										
186																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																										
187																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																										
188																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																										
189																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																										
190																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																										
191																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																										
192																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																										
193																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																										
194																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																										
195																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																										
196																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																										
197																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																										
198																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																										
199																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																										
200																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																										
201																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																										
202																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																										
203																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																										
204																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																										
205																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																										
206																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																										
207																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																										
208																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																										
209																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																										
210																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																										
211																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																										
212																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																										
213																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																										
214																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																										
215																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																										
216																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																										
217																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																										
218																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																										
219																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																										
220																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																										
221																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																										
222																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																										
223																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																										
224																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																										
225																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																										
226																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																										
227																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																										
228																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																										
229																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																										
230																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																										
231																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																										
232																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																										
233																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																										
234																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																										
235																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																										
236																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																										
237																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																										
238																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																										
239																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																										
240																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																										
241																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																										
242																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																										
243																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																										
244																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																										
245																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																										
246																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																										
247																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																										
248																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																										
249																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																										
250																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																										
251																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																										
252																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																										
253																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																										
254																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																										
255																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																										
256																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																										
257																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																										
258																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																										
259																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																										
260																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																										
261																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																										
262																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																										
263																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																										
264																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																										
265																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																										
266																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																										
267																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																										
268																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																										
269																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																										
270																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																										
271																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																										
272																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																										
273																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																										
274																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																										
275																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																										
276																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																										
277																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																										
278																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																										
279																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																										
280																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																										
281																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																										
282																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																										
283																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																										
284																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																										
285																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																										
286																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																										
287																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																										
288																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																										
289																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																										
290																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																										
291																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																										
292																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																										
293																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																										
294																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																										
295																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																										
296																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																										
297																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																										
298																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																										
299																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																										
300																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																										
301																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																										
302																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																										
303																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																										
304																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																										
305																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																										
306																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																										
307																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																										
308																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																										
309																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																										
310																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																										
311																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																										
312																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																										
313																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																										
314																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																										
315																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																										
316																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																										
317																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																										
318																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																										
319																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																										
320																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																										
321																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																										
322																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																										
323																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																										
324																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																										
325																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																										
326																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																										
327																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																										
328		</td																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																								

## Sample Condition Upon Receipt

PaceAnalytical

Client Name: MandalProject # 5072762Courier:  Fed Ex  UPS  USPS  Client  Commercial  Pace Other

Tracking #: \_\_\_\_\_

Custody Seal on Cooler/Box Present:  yes  no Seals intact:  yes  no

Date/Time 5035A kits placed in freezer

Packing Material:  Bubble Wrap  Bubble Bags  None  OtherThermometer Used 1 2 3 4 6 A B C D E Type of Ice: Wet Blue None  Samples on ice, cooling process has begunCooler Temperature 3.8 Ice Visible in Sample Containers:  yes  no

Temp should be above freezing to 6°C

Comments:

Date and Initials of person examining contents: 11-27-12 SJ

Chain of Custody Present:	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A	1.
Chain of Custody Filled Out:	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A	2.
Chain of Custody Relinquished:	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A	3.
Sampler Name & Signature on COC:	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A	4.
Short Hold Time Analysis (<72hr):	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No <input type="checkbox"/> N/A	5.
Rush Turn Around Time Requested:	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No <input type="checkbox"/> N/A	6.
Containers Intact:	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A	7.
Sample Labels match COC: -Includes date/time/ID/Analysis	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A	8.
All containers needing acid/base pres. have been checked? exceptions: VOA, coliform, TOC, O&G	<input type="checkbox"/> Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> N/A	9. (Circle) HNO <sub>3</sub> H <sub>2</sub> SO <sub>4</sub> NaOH HCl
All containers needing preservation are found to be in compliance with EPA recommendation.	<input type="checkbox"/> Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> N/A	
Headspace in VOA Vials (>6mm):	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No <input type="checkbox"/> N/A	10.
Trip Blank Present:	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A	11.
Trip Blank Custody Seals Present	<input type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A	
<b>Project Manager Review</b>		
Samples Arrived within Hold Time:	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A	12.
Sufficient Volume:	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A	13.
Correct Containers Used:	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A	14.

**Client Notification/ Resolution:**

Field Data Required?

Y / N

Person Contacted: \_\_\_\_\_ Date/Time: \_\_\_\_\_

Comments/ Resolution: \_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_Project Manager Review: J. DwyerDate: 11/27/12

CLIENT: Mondel

**Sample Container Count**

COC PAGE 1 of 1  
COC ID#       

Project # 5072767

Sample Line

Item DG9H AG1U WGFU AG0U R 4/6 BP2N BP2U BP2S BP3N BP3U BP3S AG3S AG1H Comments

1	3											
2	3											
3	3											
4	3											
5												
6												
7												
8												
9												
10												
11												
12												

Container Codes

DG9H	40mL HCl amber vial	AG0U	100mL unpreserved amber glass	BP1N	1 liter HNO3 plastic	DG9P	40mL TSP amber vial
AG1U	1liter unpreserved amber glass	AG1H	1 liter HCl amber glass	BP1S	1 liter H2SO4 plastic	DG9S	40mL H2SO4 amber vial
WGFU	4oz clear soil jar	AG1S	1 liter H2SO4 amber glass	BP1U	1 liter unpreserved plastic	DG9T	40mL Na Thio amber vial
R terra core kit		AG1T	1 liter Na Thiosulfate amber gl	BP1Z	1 liter NaOH, Zn, Ac	DG9U	40mL unpreserved amber vial
BP2N	500mL HNO3 plastic	AG2N	500mL HNO3 amber glass	BP2A	500mL NaOH, Asc Acid plastic	JGFU	4oz unpreserved amber wide
BP2U	500mL unpreserved plastic	AG2S	500mL H2SO4 amber glass	BP2O	500mL NaOH plastic		1 Wipe/Swab
BP2S	500mL H2SO4 plastic	AG2U	500mL unpreserved amber gla	BP2Z	500mL NaOH, Zn Ac	U Summa Can	
BP3N	250mL HNO3 plastic	AG3U	250mL unpreserved amber gla	AF	Air Filter	VG9H	40mL HCL clear vial
BP3U	250mL unpreserved plastic	BG1H	1 liter HCl clear glass	BP3C	250mL NaOH plastic	VG9T	40mL Na Thio. clear vial
BP3S	250mL H2SO4 plastic	BG1S	1 liter H2SO4 clear glass	BP3Z	250mL NaOH, Zn Ac plastic	VG9U	40mL unpreserved clear vial
AG3S	250mL H2SO4 glass amber	BG1T	1 liter Na Thiosulfate clear gla	C	Air Cassette	VSG	Headspace septa vial & HCL
AG1S	1 liter H2SO4 amber glass	BG1U	1 liter unpreserved glass	DG9B	40mL Na Bisulfate amber vial	WGFX	4oz wide jar w/hexane wipe
BP1U	1 liter unpreserved plastic	BP1A	1 liter NaOH, Asc Acid plastic	DG9M	40mL MeOH clear vial	ZPLC	Ziploc Bag



Microseeps, Inc  
220 William Pitt Way  
Pittsburgh, PA 15238  
Phone: (412) 826-5245  
Fax: (412) 826-3433

December 6, 2012

Merle Tebbe  
Mundell & Associates, Inc.  
110 South Downey Ave.  
Indianapolis, IN 46219

RE: MICHIGAN PLAZA / M01046

*Microseeps Workorder. 7346*

Dear Merle Tebbe:

Enclosed are the analytical results for sample(s) received by the laboratory on Wednesday, November 21, 2012. Results reported herein conform to the most current NELAC standards, where applicable, unless otherwise narrated in the body of the report.

If you have any questions concerning this report, please feel free to contact me.

Sincerely,



Julianne Rugh 12/06/2012  
jrugh@microseeps.com

Customer Service Representative

Enclosures

As a valued client we would appreciate your comments on our service

Please email [info@microseeps.com](mailto:info@microseeps.com).

Total Number of Pages \_\_\_\_\_

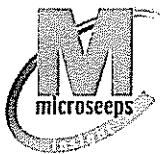
Report ID: 7346 - 313534

Page 1 of 35

#### CERTIFICATE OF ANALYSIS

This report shall not be reproduced, except in full,  
without the written consent of Microseeps, Inc





Microseeps, Inc  
220 William Pitt Way  
Pittsburgh, PA 15238  
Phone: (412) 826-5245  
Fax: (412) 826-3433

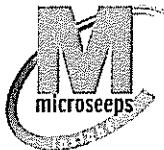
## LABORATORY ACCREDITATIONS & CERTIFICATIONS

<b>Accreditor:</b>	Pennsylvania Department of Environmental Protection, Bureau of Laboratories	
<b>Accreditation ID:</b>	02-00538	
<b>Scope:</b>	NELAP Non-Potable Water and Solid & Hazardous Waste	
<b>Accreditor:</b>	NELAP: State of Florida, Department of Health, Bureau of Laboratories	
<b>Accreditation ID:</b>	E87832	
<b>Scope:</b>	Clean Water Act (CWA)	Resource Conservation and Recovery Act (RCRA)
<b>Accreditor:</b>	South Carolina Department of Health and Environmental Control, Office of Environmental Laboratory Certification	
<b>Accreditation ID:</b>	89009003	
<b>Scope:</b>	Clean Water Act (CWA); Resource Conservation and Recovery Act (RCRA)	
<b>Accreditor:</b>	NELAP: State of Louisiana, Department of Environmental Quality	
<b>Accreditation ID:</b>	04104	
<b>Scope:</b>	Solid and Chemical Materials; Non-Potable Water	
<b>Accreditor:</b>	NELAP: New Jersey, Department of Environmental Protection	
<b>Accreditation ID:</b>	PA026	
<b>Scope:</b>	Non-Potable Water; Solid and Chemical Materials	
<b>Accreditor:</b>	NELAP: New York, Department of Health Wadsworth Center	
<b>Accreditation ID:</b>	11815	
<b>Scope:</b>	Non-Potable Water; Solid and Hazardous Waste	
<b>Accreditor:</b>	State of Connecticut, Department of Public Health, Division of Environmental Health	
<b>Accreditation ID:</b>	PH-0263	
<b>Scope:</b>	Clean Water Act (CWA) Resource Conservation and Recovery Act (RCRA)	
<b>Accreditor:</b>	NELAP: Texas, Commission on Environmental Quality	
<b>Accreditation ID:</b>	T104704453-09-TX	
<b>Scope:</b>	Non-Potable Water	
<b>Accreditor:</b>	State of New Hampshire	
<b>Accreditation ID:</b>	299409	
<b>Scope:</b>	Non-potable water	
<b>Accreditor:</b>	State of Georgia	
<b>Accreditation ID:</b>	Chapter 391-3-26	
<b>Scope:</b>	As per the Georgia EPD Rules and Regulations for Commercial Laboratories, Microseeps is accredited by the Pennsylvania Department of Environmental Protection Bureau of Laboratories under the National Environmental Laboratory Approval Program (NELAC).	

### CERTIFICATE OF ANALYSIS

This report shall not be reproduced, except in full,  
without the written consent of Microseeps, Inc.





Microseeps, Inc  
220 William Pitt Way  
Pittsburgh, PA 15238  
Phone: (412) 826-5245  
Fax: (412) 826-3433

## SAMPLE SUMMARY

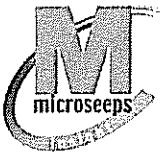
Workorder: 7346 MICHIGAN PLAZA / M01046

Lab ID	Sample ID	Matrix	Date Collected	Date Received
73460001	MMW-P-03S	Water	11/14/2012 09:32	11/21/2012 08:00
73460002	MMW-P-03D	Water	11/14/2012 10:00	11/21/2012 08:00
73460003	DUP-1	Water	11/14/2012 00:00	11/21/2012 08:00
73460004	MMW-P-02	Water	11/14/2012 10:44	11/21/2012 08:00
73460005	MMW-P-05	Water	11/14/2012 11:30	11/21/2012 08:00
73460006	MMW-P-10S	Water	11/14/2012 12:06	11/21/2012 08:00
73460007	MMW-P-10D	Water	11/14/2012 12:40	11/21/2012 08:00
73460008	MMW-P-08	Water	11/14/2012 13:18	11/21/2012 08:00
73460009	MMW-P-07	Water	11/14/2012 13:47	11/21/2012 08:00
73460010	MMW-P-01	Water	11/14/2012 14:21	11/21/2012 08:00
73460011	MMW-P-06	Water	11/14/2012 14:55	11/21/2012 08:00
73460012	MMW-9S	Water	11/14/2012 15:30	11/21/2012 08:00
73460013	MMW-10S	Water	11/15/2012 11:03	11/21/2012 08:00
73460014	MMW-1S	Water	11/15/2012 11:32	11/21/2012 08:00
73460015	MMW-8S	Water	11/15/2012 12:04	11/21/2012 08:00
73460016	MMW-C-01	Water	11/15/2012 12:42	11/21/2012 08:00
73460017	MMW-P-11S	Water	11/15/2012 13:37	11/21/2012 08:00
73460018	MMW-P-11DR	Water	11/15/2012 14:55	11/21/2012 08:00
73460019	MMW-P-12S	Water	11/19/2012 09:35	11/21/2012 08:00
73460020	MMW-P-12D	Water	11/19/2012 10:35	11/21/2012 08:00
73460021	MS	Water	11/14/2012 15:30	11/21/2012 08:00
73460022	MSD	Water	11/14/2012 15:30	11/21/2012 08:00

## CERTIFICATE OF ANALYSIS

This report shall not be reproduced, except in full,  
without the written consent of Microseeps, Inc.





Microseeps, Inc  
220 William Pitt Way  
Pittsburgh, PA 15238  
Phone: (412) 826-5245  
Fax: (412) 826-3433

## PROJECT SUMMARY

Workorder: 7346 MICHIGAN PLAZA / M01046

---

### Batch Comments

---

Batch: DISG/2615 - AM20GAX Water QC

The matrix spike and/or matrix spike duplicate, recovery or relative percent difference; accuracy influenced by the concentration of the reference sample. 73460012. Analyte Methane Batch acceptance based on laboratory control sample recovery.

## CERTIFICATE OF ANALYSIS

This report shall not be reproduced, except in full,  
without the written consent of Microseeps, Inc





Microseeps, Inc  
220 William Pitt Way  
Pittsburgh, PA 15238  
Phone: (412) 826-5245  
Fax: (412) 826-3433

## ANALYTICAL RESULTS

Workorder: 7346 MICHIGAN PLAZA / M01046

Lab ID: 73460001 Date Received: 11/21/2012 08:00 Matrix: Water  
Sample ID: MMW-P-03S Date Collected: 11/14/2012 09:32

Parameters	Results	Units	PQL	MDL	DF Prepared	By	Analyzed	By	Qual
<b>EDonors - MICR</b>									
Analysis Desc: AM23G Analytical Method: AM23G									
Lactic Acid	0.10	U mg/l	0.10	0.032	1			11/27/2012 12:44	KB
Acetic Acid	0.042	J mg/l	0.070	0.021	1			11/27/2012 12:44	KB
Propionic Acid	0.050	U mg/l	0.050	0.0040	1			11/27/2012 12:44	KB
Butyric Acid	0.050	U mg/l	0.050	0.0070	1			11/27/2012 12:44	KB
Pyruvic Acid	0.15	U mg/l	0.15	0.0040	1			11/27/2012 12:44	KB
i-Pentanoic Acid	0.15	U mg/l	0.15	0.012	1			11/27/2012 12:44	KB
Pentanoic Acid	0.070	U mg/l	0.070	0.010	1			11/27/2012 12:44	KB
i-Hexanoic Acid	0.050	U mg/l	0.050	0.013	1			11/27/2012 12:44	KB
Hexanoic Acid	0.10	U mg/l	0.10	0.039	1			11/27/2012 12:44	KB
<b>RISK - MICR</b>									
Analysis Desc: AM20GAX Analytical Method: AM20GAX									
Methane	12000	ug/l	0.10	0.018	1			11/27/2012 14:32	BW
Ethane	0.74	ug/l	0.025	0.0070	1			11/27/2012 14:32	BW
Ethene	240	ug/l	0.025	0.0050	1			11/27/2012 14:32	BW

## CERTIFICATE OF ANALYSIS

This report shall not be reproduced, except in full,  
without the written consent of Microseeps, Inc.





Microseeps, Inc  
220 William Pitt Way  
Pittsburgh, PA 15238  
Phone: (412) 826-5245  
Fax: (412) 826-3433

## ANALYTICAL RESULTS

Workorder: 7346 MICHIGAN PLAZA / M01046

Lab ID: 73460002 Date Received: 11/21/2012 08:00 Matrix: Water  
Sample ID: MMW-P-03D Date Collected: 11/14/2012 10:00

Parameters	Results	Units	PQL	MDL	DF Prepared	By	Analyzed	By	Qual
------------	---------	-------	-----	-----	-------------	----	----------	----	------

### EDonors - MICR

	Analytical Method: AM23G					
Lactic Acid	0.10	U mg/l	0.10	0.032	1	11/27/2012 13:26 KB
Acetic Acid	16	mg/l	0.70	0.21	10	11/28/2012 06:59 KB
Propionic Acid	0.43J	mg/l	0.50	0.040	10	11/28/2012 06:59 KB
Butyric Acid	0.083	mg/l	0.050	0.0070	1	11/27/2012 13:26 KB
Pyruvic Acid	0.15	U mg/l	0.15	0.0040	1	11/27/2012 13:26 KB
I-Pentanoic Acid	0.055J	mg/l	0.15	0.012	1	11/27/2012 13:26 KB
Pentanoic Acid	0.070	U mg/l	0.070	0.010	1	11/27/2012 13:26 KB
I-Hexanoic Acid	0.050	U mg/l	0.050	0.013	1	11/27/2012 13:26 KB
Hexanoic Acid	0.10	U mg/l	0.10	0.039	1	11/27/2012 13:26 KB

### RISK - MICR

	Analytical Method: AM20GAX					
Methane	20000	ug/l	0.10	0.018	1	11/27/2012 14:42 BW
Ethane	47	ug/l	0.025	0.0070	1	11/27/2012 14:42 BW
Ethene	820	ug/l	0.025	0.0050	1	11/27/2012 14:42 BW

## CERTIFICATE OF ANALYSIS

This report shall not be reproduced, except in full,  
without the written consent of Microseeps, Inc.





Microseeps, Inc  
220 William Pitt Way  
Pittsburgh, PA 15238  
Phone: (412) 826-5245  
Fax: (412) 826-3433

## ANALYTICAL RESULTS

Workorder: 7346 MICHIGAN PLAZA / M01046

Lab ID: 73460003 Date Received: 11/21/2012 08:00 Matrix: Water  
Sample ID: DUP-1 Date Collected: 11/14/2012 00:00

Parameters	Results	Units	PQL	MDL	DF Prepared	By	Analyzed	By	Qual
------------	---------	-------	-----	-----	-------------	----	----------	----	------

### EDonors - MICR

Analysis Desc: AM23G Analytical Method: AM23G

Lactic Acid	0.10	U mg/l	0.10	0.032	1	11/27/2012 14:08	KB
Acetic Acid	15	mg/l	0.70	0.21	10	11/28/2012 07:41	KB
Propionic Acid	0.56	mg/l	0.50	0.040	10	11/28/2012 07:41	KB
Butyric Acid	0.077	mg/l	0.050	0.0070	1	11/27/2012 14:08	KB
Pyruvic Acid	0.15	U mg/l	0.15	0.0040	1	11/27/2012 14:08	KB
i-Pentanoic Acid	0.056	J mg/l	0.15	0.012	1	11/27/2012 14:08	KB
Pentanoic Acid	0.070	U mg/l	0.070	0.010	1	11/27/2012 14:08	KB
i-Hexanoic Acid	0.050	U mg/l	0.050	0.013	1	11/27/2012 14:08	KB
Hexanoic Acid	0.10	U mg/l	0.10	0.039	1	11/27/2012 14:08	KB

### RISK - MICR

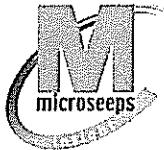
Analysis Desc: AM20GAX Analytical Method: AM20GAX

Methane	22000	ug/l	0.10	0.018	1	11/27/2012 14:54	BW
Ethane	49	ug/l	0.025	0.0070	1	11/27/2012 14:54	BW
Ethene	870	ug/l	0.025	0.0050	1	11/27/2012 14:54	BW

## CERTIFICATE OF ANALYSIS

This report shall not be reproduced, except in full,  
without the written consent of Microseeps, Inc.





Microseeps, Inc  
220 William Pitt Way  
Pittsburgh, PA 15238  
Phone: (412) 826-5245  
Fax: (412) 826-3433

## ANALYTICAL RESULTS

Workorder: 7346 MICHIGAN PLAZA / M01046

Lab ID: 73460004 Date Received: 11/21/2012 08:00 Matrix: Water  
Sample ID: MMW-P-02 Date Collected: 11/14/2012 10:44

Parameters	Results	Units	PQL	MDL	DF Prepared	By	Analyzed	By	Qual
------------	---------	-------	-----	-----	-------------	----	----------	----	------

### EDonors - MICR

Analysis Desc: AM23G		Analytical Method: AM23G						
Lactic Acid	0.10	U mg/l	0.10	0.032	1		11/27/2012 14:51	KB
Acetic Acid	0.070	U mg/l	0.070	0.021	1		11/27/2012 14:51	KB
Propionic Acid	0.050	U mg/l	0.050	0.0040	1		11/27/2012 14:51	KB
Butyric Acid	0.050	U mg/l	0.050	0.0070	1		11/27/2012 14:51	KB
Pyruvic Acid	0.15	U mg/l	0.15	0.0040	1		11/27/2012 14:51	KB
i-Pentanoic Acid	0.15	U mg/l	0.15	0.012	1		11/27/2012 14:51	KB
Pentanoic Acid	0.070	U mg/l	0.070	0.010	1		11/27/2012 14:51	KB
i-Hexanoic Acid	0.050	U mg/l	0.050	0.013	1		11/27/2012 14:51	KB
Hexanoic Acid	0.67J	mg/l	1.0	0.39	10		11/28/2012 08:23	KB

### RISK - MICR

Analysis Desc: AM20GAX		Analytical Method: AM20GAX						
Methane	12000	ug/l	0.10	0.018	1		11/27/2012 15:05	BW
Ethane	1.2	ug/l	0.025	0.0070	1		11/27/2012 15:05	BW
Ethene	570	ug/l	0.025	0.0050	1		11/27/2012 15:05	BW

## CERTIFICATE OF ANALYSIS

This report shall not be reproduced, except in full,  
without the written consent of Microseeps, Inc.





Microseeps, Inc  
220 William Pitt Way  
Pittsburgh, PA 15238  
Phone: (412) 826-5245  
Fax: (412) 826-3433

## ANALYTICAL RESULTS

Workorder: 7346 MICHIGAN PLAZA / M01046

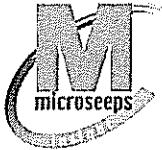
Lab ID: 73460005 Date Received: 11/21/2012 08:00 Matrix: Water  
Sample ID: MMW-P-05 Date Collected: 11/14/2012 11:30

Parameters	Results	Units	PQL	MDL	DF Prepared	By	Analyzed	By	Qual
<b>EDonors - MICR</b>									
Analysis Desc: AM23G Analytical Method: AM23G									
Lactic Acid	0.10	U mg/l	0.10	0.032	1			11/27/2012 15:33	KB
Acetic Acid	0.24	mg/l	0.070	0.021	1			11/27/2012 15:33	KB
Propionic Acid	0.050	U mg/l	0.050	0.0040	1			11/27/2012 15:33	KB
Butyric Acid	0.050	U mg/l	0.050	0.0070	1			11/27/2012 15:33	KB
Pyruvic Acid	0.15	U mg/l	0.15	0.0040	1			11/27/2012 15:33	KB
i-Pentanoic Acid	0.15	U mg/l	0.15	0.012	1			11/27/2012 15:33	KB
Pentanoic Acid	0.070	U mg/l	0.070	0.010	1			11/27/2012 15:33	KB
i-Hexanoic Acid	0.050	U mg/l	0.050	0.013	1			11/27/2012 15:33	KB
Hexanoic Acid	0.10	U mg/l	0.10	0.039	1			11/27/2012 15:33	KB
<b>RISK - MICR</b>									
Analysis Desc: AM20GAX Analytical Method: AM20GAX									
Methane	6300	ug/l	0.10	0.018	1			11/27/2012 15:15	BW
Ethane	0.19	ug/l	0.025	0.0070	1			11/27/2012 15:15	BW
Ethene	4.8	ug/l	0.025	0.0050	1			11/27/2012 15:15	BW

## CERTIFICATE OF ANALYSIS

This report shall not be reproduced, except in full  
without the written consent of Microseeps, Inc





Microseeps, Inc  
220 William Pitt Way  
Pittsburgh, PA 15236  
Phone: (412) 826-5245  
Fax: (412) 826-3433

## ANALYTICAL RESULTS

Workorder: 7346 MICHIGAN PLAZA / M01046

Lab ID: 73460006 Date Received: 11/21/2012 08:00 Matrix: Water  
Sample ID: MMW-P-10S Date Collected: 11/14/2012 12:06

Parameters	Results	Units	PQL	MDL	DF Prepared	By	Analyzed	By	Qual
------------	---------	-------	-----	-----	-------------	----	----------	----	------

### EDonors - MICR

Analysis Desc: AM23G		Analytical Method: AM23G						
Lactic Acid	0.10	U mg/l	0.10	0.032	1		11/27/2012 16:15	KB
Acetic Acid	0.070	U mg/l	0.070	0.021	1		11/27/2012 16:15	KB
Propionic Acid	0.050	U mg/l	0.050	0.0040	1		11/27/2012 16:15	KB
Butyric Acid	0.050	U mg/l	0.050	0.0070	1		11/27/2012 16:15	KB
Pyruvic Acid	0.15	U mg/l	0.15	0.0040	1		11/27/2012 16:15	KB
i-Pentanoic Acid	0.15	U mg/l	0.15	0.012	1		11/27/2012 16:15	KB
Pentanoic Acid	0.070	U mg/l	0.070	0.010	1		11/27/2012 16:15	KB
i-Hexanoic Acid	0.050	U mg/l	0.050	0.013	1		11/27/2012 16:15	KB
Hexanoic Acid	0.10	U mg/l	0.10	0.039	1		11/27/2012 16:15	KB

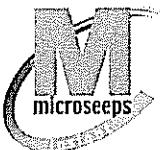
### RISK - MICR

Analysis Desc: AM20GAX		Analytical Method: AM20GAX						
Methane	7400	ug/l	0.10	0.018	1		11/27/2012 15:25	BW
Ethane	2.2	ug/l	0.025	0.0070	1		11/27/2012 15:25	BW
Ethene	10	ug/l	0.025	0.0050	1		11/27/2012 15:25	BW

## CERTIFICATE OF ANALYSIS

This report shall not be reproduced, except in full,  
without the written consent of Microseeps, Inc.





Microseeps, Inc  
220 William Pitt Way  
Pittsburgh, PA 15238  
Phone: (412) 826-5245  
Fax: (412) 826-3433

## ANALYTICAL RESULTS

Workorder: 7346 MICHIGAN PLAZA / M01046

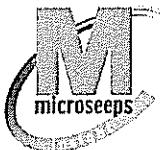
Lab ID: 73460007 Date Received: 11/21/2012 08:00 Matrix: Water  
Sample ID: MMW-P-10D Date Collected: 11/14/2012 12:40

Parameters	Results	Units	PQL	MDL	DF Prepared	By	Analyzed	By	Qual
<b>EDonors - MICR</b>									
Analysis Desc: AM23G Analytical Method: AM23G									
Lactic Acid	0.10	U mg/l	0.10	0.032	1			11/27/2012 16:57	KB
Acetic Acid	0.070	U mg/l	0.070	0.021	1			11/27/2012 16:57	KB
Propionic Acid	0.050	U mg/l	0.050	0.0040	1			11/27/2012 16:57	KB
Butyric Acid	0.050	U mg/l	0.050	0.0070	1			11/27/2012 16:57	KB
Pyruvic Acid	0.15	U mg/l	0.15	0.0040	1			11/27/2012 16:57	KB
l-Pentanoic Acid	0.15	U mg/l	0.15	0.012	1			11/27/2012 16:57	KB
Pentanoic Acid	0.070	U mg/l	0.070	0.010	1			11/27/2012 16:57	KB
l-Hexanoic Acid	0.050	U mg/l	0.050	0.013	1			11/27/2012 16:57	KB
Hexanoic Acid	0.10	U mg/l	0.10	0.039	1			11/27/2012 16:57	KB
<b>RISK - MICR</b>									
Analysis Desc: AM20GAX Analytical Method: AM20GAX									
Methane	22000	ug/l	0.10	0.018	1			11/27/2012 15:35	BW
Ethane	2.0	ug/l	0.025	0.0070	1			11/27/2012 15:35	BW
Ethene	160	ug/l	0.025	0.0050	1			11/27/2012 15:35	BW

## CERTIFICATE OF ANALYSIS

This report shall not be reproduced, except in full,  
without the written consent of Microseeps, Inc.





Microseeps, Inc  
220 William Pitt Way  
Pittsburgh, PA 15238  
Phone: (412) 826-5245  
Fax: (412) 826-3433

## ANALYTICAL RESULTS

Workorder: 7346 MICHIGAN PLAZA / M01046

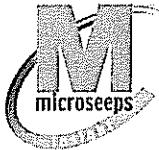
Lab ID: 73460008 Date Received: 11/21/2012 08:00 Matrix: Water  
Sample ID: MMW-P-08 Date Collected: 11/14/2012 13:18

Parameters	Results	Units	PQL	MDL	DF Prepared	By	Analyzed	By	Qual
<b>EDonors - MICR</b>									
Analysis Desc: AM23G Analytical Method: AM23G									
Lactic Acid	0.044J	mg/l	0.10	0.032	1			11/27/2012 17:39	KB
Acetic Acid	0.030J	mg/l	0.070	0.021	1			11/27/2012 17:39	KB
Propionic Acid	0.050 U	mg/l	0.050	0.0040	1			11/27/2012 17:39	KB
Butyric Acid	0.050 U	mg/l	0.050	0.0070	1			11/27/2012 17:39	KB
Pyruvic Acid	0.15 U	mg/l	0.15	0.0040	1			11/27/2012 17:39	KB
i-Pentanoic Acid	0.15 U	mg/l	0.15	0.012	1			11/27/2012 17:39	KB
Pentanoic Acid	0.070 U	mg/l	0.070	0.010	1			11/27/2012 17:39	KB
i-Hexanoic Acid	0.050 U	mg/l	0.050	0.013	1			11/27/2012 17:39	KB
Hexanoic Acid	0.10 U	mg/l	0.10	0.039	1			11/27/2012 17:39	KB
<b>RISK - MICR</b>									
Analysis Desc: AM20GAX Analytical Method: AM20GAX									
Methane	7000	ug/l	0.10	0.018	1			11/27/2012 15:45	BW
Ethane	9.3	ug/l	0.025	0.0070	1			11/27/2012 15:45	BW
Ethene	230	ug/l	0.025	0.0050	1			11/27/2012 15:45	BW

## CERTIFICATE OF ANALYSIS

This report shall not be reproduced, except in full,  
without the written consent of Microseeps, Inc.





Microseeps, Inc  
220 William Pitt Way  
Pittsburgh, PA 15238  
Phone: (412) 826-5245  
Fax: (412) 826-3433

## ANALYTICAL RESULTS

Workorder: 7346 MICHIGAN PLAZA / M01046

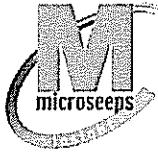
Lab ID: 73460009 Date Received: 11/21/2012 08:00 Matrix: Water  
Sample ID: MMW-P-07 Date Collected: 11/14/2012 13:47

Parameters	Results	Units	PQL	MDL	DF Prepared	By	Analyzed	By	Qual
<b>EDonors - MICR</b>									
Analysis Desc: AM23G Analytical Method: AM23G									
Lactic Acid	0.055J	mg/l	0.10	0.032	1			11/27/2012 18:21	KB
Acetic Acid	0.051J	mg/l	0.070	0.021	1			11/27/2012 18:21	KB
Propionic Acid	0.050	U mg/l	0.050	0.0040	1			11/27/2012 18:21	KB
Butyric Acid	0.050	U mg/l	0.050	0.0070	1			11/27/2012 18:21	KB
Pyruvic Acid	0.15	U mg/l	0.15	0.0040	1			11/27/2012 18:21	KB
l-Pentanoic Acid	0.15	U mg/l	0.15	0.012	1			11/27/2012 18:21	KB
Pentanoic Acid	0.070	U mg/l	0.070	0.010	1			11/27/2012 18:21	KB
l-Hexanoic Acid	0.050	U mg/l	0.050	0.013	1			11/27/2012 18:21	KB
Hexanoic Acid	0.052J	mg/l	0.10	0.039	1			11/27/2012 18:21	KB
<b>RISK - MICR</b>									
Analysis Desc: AM20GAX Analytical Method: AM20GAX									
Methane	6200	ug/l	0.10	0.018	1			11/27/2012 15:55	BW
Ethane	0.13	ug/l	0.025	0.0070	1			11/27/2012 15:55	BW
Ethene	180	ug/l	0.025	0.0050	1			11/27/2012 15:55	BW

## CERTIFICATE OF ANALYSIS

This report shall not be reproduced, except in full,  
without the written consent of Microseeps, Inc.





Microseeps, Inc  
220 William Pitt Way  
Pittsburgh, PA 15238  
Phone: (412) 826-5245  
Fax: (412) 826-3433

## ANALYTICAL RESULTS

Workorder: 7346 MICHIGAN PLAZA / M01046

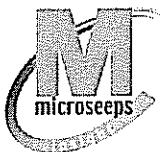
Lab ID: 73460010 Date Received: 11/21/2012 08:00 Matrix: Water  
Sample ID: MMW-P-01 Date Collected: 11/14/2012 14:21

Parameters	Results	Units	PQL	MDL	DF Prepared	By	Analyzed	By	Qual
<b>EDonors - MICR</b>									
Analysis Desc: AM23G Analytical Method: AM23G									
Lactic Acid	0.050	J mg/l	0.10	0.032	1			11/27/2012 19:03	KB
Acetic Acid	0.058	J mg/l	0.070	0.021	1			11/27/2012 19:03	KB
Propionic Acid	0.050	U mg/l	0.050	0.0040	1			11/27/2012 19:03	KB
Butyric Acid	0.050	U mg/l	0.050	0.0070	1			11/27/2012 19:03	KB
Pyruvic Acid	0.15	U mg/l	0.15	0.0040	1			11/27/2012 19:03	KB
i-Pentanoic Acid	0.15	U mg/l	0.15	0.012	1			11/27/2012 19:03	KB
Pentanoic Acid	0.070	U mg/l	0.070	0.010	1			11/27/2012 19:03	KB
i-Hexanoic Acid	0.050	U mg/l	0.050	0.013	1			11/27/2012 19:03	KB
Hexanoic Acid	0.10	U mg/l	0.10	0.039	1			11/27/2012 19:03	KB
<b>RISK - MICR</b>									
Analysis Desc: AM20GAX Analytical Method: AM20GAX									
Methane	10000	ug/l	0.10	0.018	1			11/27/2012 16:06	BW
Ethane	0.43	ug/l	0.025	0.0070	1			11/27/2012 16:06	BW
Ethene	540	ug/l	0.025	0.0050	1			11/27/2012 16:06	BW

## CERTIFICATE OF ANALYSIS

This report shall not be reproduced, except in full,  
without the written consent of Microseeps, Inc.





Microseeps, Inc  
220 William Pitt Way  
Pittsburgh, PA 15238  
Phone: (412) 826-5245  
Fax: (412) 826-3433

## ANALYTICAL RESULTS

Workorder: 7346 MICHIGAN PLAZA / M01046

Lab ID: 73460011 Date Received: 11/21/2012 08:00 Matrix: Water  
Sample ID: MMW-P-06 Date Collected: 11/14/2012 14:55

Parameters	Results	Units	PQL	MDL	DF Prepared	By	Analyzed	By	Qual
<b>EDonors - MICR</b>									
Analysis Desc: AM23G Analytical Method: AM23G									
Lactic Acid	0.10	U mg/l	0.10	0.032	1			11/27/2012 19:45	KB
Acetic Acid	0.063	J mg/l	0.070	0.021	1			11/27/2012 19:45	KB
Propionic Acid	0.050	U mg/l	0.050	0.0040	1			11/27/2012 19:45	KB
Butyric Acid	0.050	U mg/l	0.050	0.0070	1			11/27/2012 19:45	KB
Pyruvic Acid	0.15	U mg/l	0.15	0.0040	1			11/27/2012 19:45	KB
I-Pentanoic Acid	0.15	U mg/l	0.15	0.012	1			11/27/2012 19:45	KB
Pentanoic Acid	0.070	U mg/l	0.070	0.010	1			11/27/2012 19:45	KB
i-Hexanoic Acid	0.050	U mg/l	0.050	0.013	1			11/27/2012 19:45	KB
Hexanoic Acid	0.10	U mg/l	0.10	0.039	1			11/27/2012 19:45	KB
<b>RISK - MICR</b>									
Analysis Desc: AM20GAX Analytical Method: AM20GAX									
Methane	16000	ug/l	0.10	0.018	1			11/27/2012 16:17	BW
Ethane	0.74	ug/l	0.025	0.0070	1			11/27/2012 16:17	BW
Ethene	500	ug/l	0.025	0.0050	1			11/27/2012 16:17	BW

## CERTIFICATE OF ANALYSIS

This report shall not be reproduced, except in full,  
without the written consent of Microseeps, Inc.





Microseeps, Inc  
220 William Pitt Way  
Pittsburgh, PA 15238  
Phone: (412) 826-5245  
Fax: (412) 826-3433

## ANALYTICAL RESULTS

Workorder: 7346 MICHIGAN PLAZA / M01046

Lab ID: 73460012 Date Received: 11/21/2012 08:00 Matrix: Water  
Sample ID: MMW-9S Date Collected: 11/14/2012 15:30

Parameters	Results	Units	PQL	MDL	DF Prepared	By	Analyzed	By	Qual
------------	---------	-------	-----	-----	-------------	----	----------	----	------

### EDonors - MICR

Analysis Desc:	AM23G	Analytical Method: AM23G					
Lactic Acid	0.12	mg/l	0.10	0.032	1	11/27/2012 20:27	KB
Acetic Acid	0.072	mg/l	0.070	0.021	1	11/27/2012 20:27	KB
Propionic Acid	0.050	U mg/l	0.050	0.0040	1	11/27/2012 20:27	KB
Butyric Acid	0.050	U mg/l	0.050	0.0070	1	11/27/2012 20:27	KB
Pyruvic Acid	0.15	U mg/l	0.15	0.0040	1	11/27/2012 20:27	KB
i-Pentanoic Acid	0.15	U mg/l	0.15	0.012	1	11/27/2012 20:27	KB
Pentanoic Acid	0.070	U mg/l	0.070	0.010	1	11/27/2012 20:27	KB
i-Hexanoic Acid	0.050	U mg/l	0.050	0.013	1	11/27/2012 20:27	KB
Hexanoic Acid	0.10	U mg/l	0.10	0.039	1	11/27/2012 20:27	KB

### RISK - MICR

Analysis Desc:	AM20GAX	Analytical Method: AM20GAX					
Methane	5800	ug/l	0.10	0.018	1	11/28/2012 08:54	GT
Ethane	1.3	ug/l	0.025	0.0070	1	11/28/2012 08:54	GT
Ethene	27	ug/l	0.025	0.0050	1	11/28/2012 08:54	GT

## CERTIFICATE OF ANALYSIS

This report shall not be reproduced, except in full,  
without the written consent of Microseeps, Inc.





Microseeps, Inc  
220 William Pitt Way  
Pittsburgh, PA 15238  
Phone: (412) 826-5245  
Fax: (412) 826-3433

## ANALYTICAL RESULTS

Workorder: 7346 MICHIGAN PLAZA / M01046

Lab ID: 73460013 Date Received: 11/21/2012 08:00 Matrix: Water  
Sample ID: MMW-10S Date Collected: 11/15/2012 11:03

Parameters	Results	Units	PQL	MDL	DF Prepared	By	Analyzed	By	Qual
<b>EDonors - MICR</b>									
Analysis Desc: AM23G Analytical Method: AM23G									
Lactic Acid	0.10	U mg/l	0.10	0.032	1			11/27/2012 21:10	KB
Acetic Acid	0.051	J mg/l	0.070	0.021	1			11/27/2012 21:10	KB
Propionic Acid	0.050	U mg/l	0.050	0.0040	1			11/27/2012 21:10	KB
Butyric Acid	0.050	U mg/l	0.050	0.0070	1			11/27/2012 21:10	KB
Pyruvic Acid	0.15	U mg/l	0.15	0.0040	1			11/27/2012 21:10	KB
I-Pentanoic Acid	0.15	U mg/l	0.15	0.012	1			11/27/2012 21:10	KB
Pentanoic Acid	0.070	U mg/l	0.070	0.010	1			11/27/2012 21:10	KB
I-Hexanoic Acid	0.050	U mg/l	0.050	0.013	1			11/27/2012 21:10	KB
Hexanoic Acid	0.12	mg/l	0.10	0.039	1			11/27/2012 21:10	KB
<b>RISK - MICR</b>									
Analysis Desc: AM20GAX Analytical Method: AM20GAX									
Methane	9800	ug/l	0.10	0.018	1			11/29/2012 16:13	BW
Ethane	0.084	ug/l	0.025	0.0070	1			11/29/2012 16:13	BW
Ethene	9.4	ug/l	0.025	0.0050	1			11/29/2012 16:13	BW

Report ID: 7346 - 313534

Page 17 of 35

## CERTIFICATE OF ANALYSIS

This report shall not be reproduced, except in full,  
without the written consent of Microseeps, Inc.





Microseeps, Inc  
220 William Pitt Way  
Pittsburgh, PA 15238  
Phone: (412) 826-5245  
Fax: (412) 826-3433

## ANALYTICAL RESULTS

Workorder: 7346 MICHIGAN PLAZA / M01046

Lab ID: 73460014 Date Received: 11/21/2012 08:00 Matrix: Water  
Sample ID: MMW-1S Date Collected: 11/15/2012 11:32

Parameters	Results	Units	PQL	MDL	DF Prepared	By	Analyzed	By	Qual
<b>EDonors - MICR</b>									
Analysis Desc: AM23G Analytical Method: AM23G									
Lactic Acid	0.032	J mg/l	0.10	0.032	1			11/27/2012 21:52	KB
Acetic Acid	0.040	J mg/l	0.070	0.021	1			11/27/2012 21:52	KB
Propionic Acid	0.050	U mg/l	0.050	0.0040	1			11/27/2012 21:52	KB
Butyric Acid	0.050	U mg/l	0.050	0.0070	1			11/27/2012 21:52	KB
Pyruvic Acid	0.15	U mg/l	0.15	0.0040	1			11/27/2012 21:52	KB
i-Pentanoic Acid	0.15	U mg/l	0.15	0.012	1			11/27/2012 21:52	KB
Pentanoic Acid	0.070	U mg/l	0.070	0.010	1			11/27/2012 21:52	KB
i-Hexanoic Acid	0.050	U mg/l	0.050	0.013	1			11/27/2012 21:52	KB
Hexanoic Acid	0.10	U mg/l	0.10	0.039	1			11/27/2012 21:52	KB
<b>RISK - MIICR</b>									
Analysis Desc: AM20GAX Analytical Method: AM20GAX									
Methane	390	ug/l	0.10	0.018	1			11/29/2012 16:25	BW
Ethane	0.034	ug/l	0.025	0.0070	1			11/29/2012 16:25	BW
Ethene	0.11	ug/l	0.025	0.0050	1			11/29/2012 16:25	BW

## CERTIFICATE OF ANALYSIS

This report shall not be reproduced, except in full,  
without the written consent of Microseeps, Inc.





Microseeps, Inc  
220 William Pitt Way  
Pittsburgh, PA 15238  
Phone: (412) 826-5245  
Fax: (412) 826-3433

## ANALYTICAL RESULTS

Workorder: 7346 MICHIGAN PLAZA / M01046

Lab ID: 73460015 Date Received: 11/21/2012 08:00 Matrix: Water  
Sample ID: MMW-8S Date Collected: 11/15/2012 12:04

Parameters	Results	Units	PQL	MDL	DF Prepared	By	Analyzed	By	Qual
<b>EDonors - MICR</b>									
Analysis Desc: AM23G Analytical Method: AM23G									
Lactic Acid	0.040	J mg/l	0.10	0.032	1			11/27/2012 22:34	KB
Acetic Acid	0.070	U mg/l	0.070	0.021	1			11/27/2012 22:34	KB
Propionic Acid	0.050	U mg/l	0.050	0.0040	1			11/27/2012 22:34	KB
Butyric Acid	0.050	U mg/l	0.050	0.0070	1			11/27/2012 22:34	KB
Pyruvic Acid	0.15	U mg/l	0.15	0.0040	1			11/27/2012 22:34	KB
i-Pentanoic Acid	0.15	U mg/l	0.15	0.012	1			11/27/2012 22:34	KB
Pentanoic Acid	0.070	U mg/l	0.070	0.010	1			11/27/2012 22:34	KB
i-Hexanoic Acid	0.050	U mg/l	0.050	0.013	1			11/27/2012 22:34	KB
Hexanoic Acid	0.10	U mg/l	0.10	0.039	1			11/27/2012 22:34	KB
<b>RISK - MICR</b>									
Analysis Desc: AM20GAX Analytical Method: AM20GAX									
Methane	13000	ug/l	0.10	0.018	1			11/29/2012 16:38	BW
Ethane	0.017	J ug/l	0.025	0.0070	1			11/29/2012 16:38	BW
Ethene	10	ug/l	0.025	0.0050	1			11/29/2012 16:38	BW

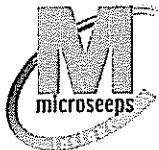
Report ID: 7346 - 313534

Page 19 of 35

## CERTIFICATE OF ANALYSIS

This report shall not be reproduced, except in full,  
without the written consent of Microseeps, Inc.





Microseeps, Inc  
220 William Pitt Way  
Pittsburgh, PA 15238  
Phone: (412) 826-5245  
Fax: (412) 826-3433

## ANALYTICAL RESULTS

Workorder: 7346 MICHIGAN PLAZA / M01046

Lab ID: 73460016 Date Received: 11/21/2012 08:00 Matrix: Water  
Sample ID: MMW-C-01 Date Collected: 11/15/2012 12:42

Parameters	Results	Units	PQL	MDL	DF Prepared	By	Analyzed	By	Qual
<b>EDonors - MICR</b>									
Analysis Desc: AM23G Analytical Method: AM23G									
Lactic Acid	0.10	U mg/l	0.10	0.032	1			11/27/2012 23:16	KB
Acetic Acid	0.070	U mg/l	0.070	0.021	1			11/27/2012 23:16	KB
Propionic Acid	0.050	U mg/l	0.050	0.0040	1			11/27/2012 23:16	KB
Butyric Acid	0.050	U mg/l	0.050	0.0070	1			11/27/2012 23:16	KB
Pyruvic Acid	0.15	U mg/l	0.15	0.0040	1			11/27/2012 23:16	KB
i-Pentanoic Acid	0.15	U mg/l	0.15	0.012	1			11/27/2012 23:16	KB
Pentanoic Acid	0.070	U mg/l	0.070	0.010	1			11/27/2012 23:16	KB
i-Hexanoic Acid	0.050	U mg/l	0.050	0.013	1			11/27/2012 23:16	KB
Hexanoic Acid	0.10	U mg/l	0.10	0.039	1			11/27/2012 23:16	KB
<b>RISK - MICR</b>									
Analysis Desc: AM20GAX Analytical Method: AM20GAX									
Methane	11000	ug/l	0.10	0.018	1			11/29/2012 16:51	BW
Ethane	0.026	ug/l	0.025	0.0070	1			11/29/2012 16:51	BW
Ethene	2.3	ug/l	0.025	0.0050	1			11/29/2012 16:51	BW

## CERTIFICATE OF ANALYSIS

This report shall not be reproduced, except in full,  
without the written consent of Microseeps, Inc.





Microseeps, Inc  
220 William Pitt Way  
Pittsburgh, PA 15238  
Phone: (412) 826-5245  
Fax: (412) 826-3433

## ANALYTICAL RESULTS

Workorder: 7346 MICHIGAN PLAZA / M01046

Lab ID: 73460017 Date Received: 11/21/2012 08:00 Matrix: Water  
Sample ID: MMW-P-11S Date Collected: 11/15/2012 13:37

Parameters	Results	Units	PQL	MDL	DF Prepared	By	Analyzed	By	Qual
<b>EDonors - MICR</b>									
Analysis Desc: AM23G Analytical Method: AM23G									
Lactic Acid	0.035J	mg/l	0.10	0.032	1			11/27/2012 23:58	KB
Acetic Acid	0.046J	mg/l	0.070	0.021	1			11/27/2012 23:58	KB
Propionic Acid	0.050 U	mg/l	0.050	0.0040	1			11/27/2012 23:58	KB
Butyric Acid	0.050 U	mg/l	0.050	0.0070	1			11/27/2012 23:58	KB
Pyruvic Acid	0.15 U	mg/l	0.15	0.0040	1			11/27/2012 23:58	KB
i-Pentanoic Acid	0.15 U	mg/l	0.15	0.012	1			11/27/2012 23:58	KB
Pentanoic Acid	0.070 U	mg/l	0.070	0.010	1			11/27/2012 23:58	KB
i-Hexanoic Acid	0.050 U	mg/l	0.050	0.013	1			11/27/2012 23:58	KB
Hexanoic Acid	0.10 U	mg/l	0.10	0.039	1			11/27/2012 23:58	KB
<b>RISK - MICR</b>									
Analysis Desc: AM20GAX Analytical Method: AM20GAX									
Methane	5200	ug/l	0.10	0.018	1			11/29/2012 17:04	BW
Ethane	0.18	ug/l	0.025	0.0070	1			11/29/2012 17:04	BW
Ethene	3.8	ug/l	0.025	0.0050	1			11/29/2012 17:04	BW

## CERTIFICATE OF ANALYSIS

This report shall not be reproduced, except in full,  
without the written consent of Microseeps, Inc.





Microseeps, Inc  
220 William Pitt Way  
Pittsburgh, PA 15238  
Phone: (412) 826-5245  
Fax: (412) 826-3433

## ANALYTICAL RESULTS

Workorder: 7346 MICHIGAN PLAZA / M01046

Lab ID: 73460018 Date Received: 11/21/2012 08:00 Matrix: Water  
Sample ID: MMW-P-11DR Date Collected: 11/15/2012 14:55

Parameters	Results	Units	PQL	MDL	DF Prepared	By	Analyzed	By	Qual
------------	---------	-------	-----	-----	-------------	----	----------	----	------

### EDonors - MICR

Analysis Desc: AM23G	Analytical Method: AM23G								
Lactic Acid	0.10	U mg/l	0.10	0.032	1			11/28/2012 00:40	KB
Acetic Acid	0.070	U mg/l	0.070	0.021	1			11/28/2012 00:40	KB
Propionic Acid	0.050	U mg/l	0.050	0.0040	1			11/28/2012 00:40	KB
Butyric Acid	0.050	U mg/l	0.050	0.0070	1			11/28/2012 00:40	KB
Pyruvic Acid	0.15	U mg/l	0.15	0.0040	1			11/28/2012 00:40	KB
I-Pentanoic Acid	0.15	U mg/l	0.15	0.012	1			11/28/2012 00:40	KB
Pentanoic Acid	0.070	U mg/l	0.070	0.010	1			11/28/2012 00:40	KB
I-Hexanoic Acid	0.050	U mg/l	0.050	0.013	1			11/28/2012 00:40	KB
Hexanoic Acid	0.10	U mg/l	0.10	0.039	1			11/28/2012 00:40	KB

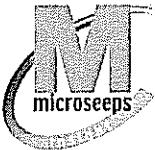
### RISK - MICR

Analysis Desc: AM20GAX	Analytical Method: AM20GAX								
Methane	6200	ug/l	0.10	0.018	1			11/29/2012 17:17	BW
Ethane	1.2	ug/l	0.025	0.0070	1			11/29/2012 17:17	BW
Ethene	19	ug/l	0.025	0.0050	1			11/29/2012 17:17	BW

## CERTIFICATE OF ANALYSIS

This report shall not be reproduced, except in full,  
without the written consent of Microseeps, Inc.





Microseeps, Inc  
220 William Pitt Way  
Pittsburgh, PA 15238  
Phone: (412) 826-5245  
Fax: (412) 826-3433

## ANALYTICAL RESULTS

Workorder: 7346 MICHIGAN PLAZA / M01046

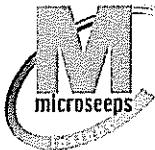
Lab ID: 73460019 Date Received: 11/21/2012 08:00 Matrix: Water  
Sample ID: MMW-P-12S Date Collected: 11/19/2012 09:35

Parameters	Results	Units	PQL	MDL	DF Prepared	By	Analyzed	By	Qual
<b>EDonors - MICR</b>									
Analysis Desc: AM23G Analytical Method: AM23G									
Lactic Acid	0.10	U mg/l	0.10	0.032	1			11/28/2012 01:22	KB
Acetic Acid	0.052	J mg/l	0.070	0.021	1			11/28/2012 01:22	KB
Propionic Acid	0.050	U mg/l	0.050	0.0040	1			11/28/2012 01:22	KB
Butyric Acid	0.050	U mg/l	0.050	0.0070	1			11/28/2012 01:22	KB
Pyruvic Acid	0.15	U mg/l	0.15	0.0040	1			11/28/2012 01:22	KB
i-Pentanoic Acid	0.15	U mg/l	0.15	0.012	1			11/28/2012 01:22	KB
Pentanoic Acid	0.070	U mg/l	0.070	0.010	1			11/28/2012 01:22	KB
i-Hexanoic Acid	0.050	U mg/l	0.050	0.013	1			11/28/2012 01:22	KB
Hexanoic Acid	0.10	U mg/l	0.10	0.039	1			11/28/2012 01:22	KB
<b>RISK - MICR</b>									
Analysis Desc: AM20GAX Analytical Method: AM20GAX									
Methane	33	ug/l	0.10	0.018	1			11/29/2012 17:31	BW
Ethane	0.88	ug/l	0.025	0.0070	1			11/29/2012 17:31	BW
Ethene	0.67	ug/l	0.025	0.0050	1			11/29/2012 17:31	BW

## CERTIFICATE OF ANALYSIS

This report shall not be reproduced, except in full,  
without the written consent of Microseeps, Inc.





Microseeps, Inc  
220 William Pitt Way  
Pittsburgh, PA 15238  
Phone: (412) 826-5245  
Fax: (412) 826-3433

## ANALYTICAL RESULTS

Workorder: 7346 MICHIGAN PLAZA / M01046

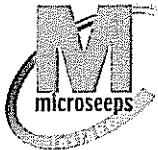
Lab ID: 73460020 Date Received: 11/21/2012 08:00 Matrix: Water  
Sample ID: MMW-P-12D Date Collected: 11/19/2012 10:35

Parameters	Results	Units	PQL	MDL	DF Prepared	By	Analyzed	By	Qual
<b>EDonors - MICR</b>									
Analysis Desc: AM23G Analytical Method: AM23G									
Lactic Acid	0.10	U mg/l	0.10	0.032	1			11/28/2012 02:04	KB
Acetic Acid	0.052	J mg/l	0.070	0.021	1			11/28/2012 02:04	KB
Propionic Acid	0.050	U mg/l	0.050	0.0040	1			11/28/2012 02:04	KB
Butyric Acid	0.050	U mg/l	0.050	0.0070	1			11/28/2012 02:04	KB
Pyruvic Acid	0.15	U mg/l	0.15	0.0040	1			11/28/2012 02:04	KB
i-Pentanoic Acid	0.15	U mg/l	0.15	0.012	1			11/28/2012 02:04	KB
Pentanoic Acid	0.070	U mg/l	0.070	0.010	1			11/28/2012 02:04	KB
i-Hexanoic Acid	0.050	U mg/l	0.050	0.013	1			11/28/2012 02:04	KB
Hexanoic Acid	0.10	U mg/l	0.10	0.039	1			11/28/2012 02:04	KB
<b>RISK - MICR</b>									
Analysis Desc: AM20GAX Analytical Method: AM20GAX									
Methane	20	ug/l	0.10	0.018	1			11/29/2012 17:43	BW
Ethane	1.2	ug/l	0.025	0.0070	1			11/29/2012 17:43	BW
Ethene	0.65	ug/l	0.025	0.0050	1			11/29/2012 17:43	BW

## CERTIFICATE OF ANALYSIS

This report shall not be reproduced, except in full,  
without the written consent of Microseeps, Inc.





Microseeps, Inc  
220 William Pitt Way  
Pittsburgh, PA 15238  
Phone: (412) 826-5245  
Fax: (412) 826-3433

## ANALYTICAL RESULTS

Workorder: 7346 MICHIGAN PLAZA / M01046

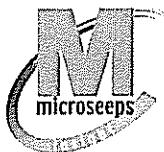
Lab ID: 73460021 Date Received: 11/21/2012 08:00 Matrix: Water  
Sample ID: MS Date Collected: 11/14/2012 15:30

Parameters	Results	Units	PQL	MDL	DF Prepared	By	Analyzed	By	Qual
<b>EDonors - MICR</b>									
Analysis Desc: AM23G Analytical Method: AM23G									
Lactic Acid	2.0	mg/l	0.10	0.032	1			11/28/2012 02:47	KB
Acetic Acid	2.0	mg/l	0.070	0.021	1			11/28/2012 02:47	KB
Propionic Acid	1.9	mg/l	0.050	0.0040	1			11/28/2012 02:47	KB
Butyric Acid	1.9	mg/l	0.050	0.0070	1			11/28/2012 02:47	KB
Pyruvic Acid	2.0	mg/l	0.15	0.0040	1			11/28/2012 02:47	KB
i-Pentanoic Acid	1.8	mg/l	0.15	0.012	1			11/28/2012 02:47	KB
Pentanoic Acid	1.8	mg/l	0.070	0.010	1			11/28/2012 02:47	KB
i-Hexanoic Acid	2.3	mg/l	0.050	0.013	1			11/28/2012 02:47	KB
Hexanoic Acid	1.8	mg/l	0.10	0.039	1			11/28/2012 02:47	KB
<b>RISK - MICR</b>									
Analysis Desc: AM20GAX Analytical Method: AM20GAX									
Methane	8000	ug/l	0.10	0.018	1			11/28/2012 09:09	GT
Ethane	56	ug/l	0.025	0.0070	1			11/28/2012 09:09	GT
Ethene	78	ug/l	0.025	0.0050	1			11/28/2012 09:09	GT

## CERTIFICATE OF ANALYSIS

This report shall not be reproduced, except in full,  
without the written consent of Microseeps, Inc.





Microseeps, Inc  
220 William Pitt Way  
Pittsburgh, PA 15238  
Phone: (412) 826-5245  
Fax: (412) 826-3433

## ANALYTICAL RESULTS

Workorder: 7346 MICHIGAN PLAZA / M01046

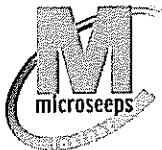
Lab ID: 73460022 Date Received: 11/21/2012 08:00 Matrix: Water  
Sample ID: MSD Date Collected: 11/14/2012 15:30

Parameters	Results	Units	PQL	MDL	DF Prepared	By	Analyzed	By	Qual
<b>EDonors - MICR</b>									
Analysis Desc: AM23G Analytical Method: AM23G									
Lactic Acid	2.1	mg/l	0.10	0.032	1			11/28/2012 03:29	KB
Acetic Acid	2.0	mg/l	0.070	0.021	1			11/28/2012 03:29	KB
Propionic Acid	1.9	mg/l	0.050	0.0040	1			11/28/2012 03:29	KB
Butyric Acid	1.9	mg/l	0.050	0.0070	1			11/28/2012 03:29	KB
Pyruvic Acid	2.0	mg/l	0.15	0.0040	1			11/28/2012 03:29	KB
i-Pentanoic Acid	1.8	mg/l	0.15	0.012	1			11/28/2012 03:29	KB
Pentanoic Acid	1.8	mg/l	0.070	0.010	1			11/28/2012 03:29	KB
i-Hexanoic Acid	2.0	mg/l	0.050	0.013	1			11/28/2012 03:29	KB
Hexanoic Acid	1.9	mg/l	0.10	0.039	1			11/28/2012 03:29	KB
<b>RISK - MICR</b>									
Analysis Desc: AM20GAX Analytical Method: AM20GAX									
Methane	8000	ug/l	0.10	0.018	1			11/28/2012 09:21	GT
Ethane	51	ug/l	0.025	0.0070	1			11/28/2012 09:21	GT
Ethene	77	ug/l	0.025	0.0050	1			11/28/2012 09:21	GT

## CERTIFICATE OF ANALYSIS

This report shall not be reproduced, except in full,  
without the written consent of Microseeps, Inc.





Microseeps, Inc  
220 William Pitt Way  
Pittsburgh, PA 15238  
Phone: (412) 826-5245  
Fax: (412) 826-3433

## ANALYTICAL RESULTS QUALIFIERS

Workorder: 7346 MICHIGAN PLAZA / M01046

### PARAMETER QUALIFIERS

- MDL Method Detection Limit. Can be used synonymously with LOD; Limit Of Detection.
- PQL Practical Quanitation Limit. Can be used synonymously with LOQ; Limit Of Quantitation.
- ND Not detected at or above reporting limit
- DF Dilution Factor.
- S Surrogate
- RPD Relative Percent Difference.
- % Rec Percent Recovery.
- U Indicates the compound was analyzed for, but not detected at or above the noted concentration
- J Estimated concentration greater than the set method detection limit (MDL) and less than the set reporting limit (PQL)

### CERTIFICATE OF ANALYSIS

This report shall not be reproduced, except in full,  
without the written consent of Microseeps, Inc





Microseeps, Inc  
220 William Pitt Way  
Pittsburgh, PA 15238  
Phone: (412) 826-5245  
Fax: (412) 826-3433

## QUALITY CONTROL DATA

Workorder: 7346 MICHIGAN PLAZA / M01046

QC Batch: DISG/2614 Analysis Method: AM20GAX

QC Batch Method: AM20GAX

Associated Lab Samples: 73460001, 73460002, 73460003, 73460004, 73460005, 73460006, 73460007, 73460008, 73460009, 73460010, 73460011

METHOD BLANK: 16161

Parameter	Units	Blank Result	Reporting Limit Qualifiers	
<b>RISK</b>				
Methane	ug/l	0.10 U	0.10	
Ethane	ug/l	0.025 U	0.025	
Ethene	ug/l	0.025 U	0.025	

LABORATORY CONTROL SAMPLE & LCSD: 16162 16163

Parameter	Units	Spike Conc	LCS Result	LCSD Result	LCS % Rec	LCSD % Rec	% Rec Limit	RPD	Max RPD Qualifiers
<b>RISK</b>									
Methane	ug/l	820	800	800	97	98	80-120	1	20
Ethane	ug/l	42	40	41	96	97	80-120	1	20
Ethene	ug/l	39	37	38	95	97	80-120	2.1	20

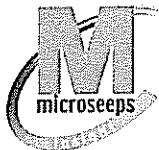
MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 16164 16165 Original: 73200001

Parameter	Units	Original Result	Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limit	RPD	Max RPD Qualifiers
<b>RISK</b>										
Methane	ug/l	0.071	820	820	760	100	92	70-130	8.3	20
Ethane	ug/l	0.0063	42	42	37	100	89	70-130	12	20
Ethene	ug/l	0.0083	39	39	35	100	90	70-130	11	20

## CERTIFICATE OF ANALYSIS

This report shall not be reproduced, except in full,  
without the written consent of Microseeps, Inc.





Microseeps, Inc  
220 William Pitt Way  
Pittsburgh, PA 15238  
Phone: (412) 826-5245  
Fax: (412) 826-3433

## QUALITY CONTROL DATA

Workorder: 7346 MICHIGAN PLAZA / M01046

QC Batch: DISG/2615 Analysis Method: AM20GAX  
QC Batch Method: AM20GAX  
Associated Lab Samples: 73460012, 73460021, 73460022

METHOD BLANK: 16181

Parameter	Units	Blank Result	Reporting Limit	Qualifiers
RISK				
Methane	ug/l	0 10 U	0 10	
Ethane	ug/l	0 025 U	0 025	
Ethene	ug/l	0 025 U	0 025	

LABORATORY CONTROL SAMPLE & LCSD: 16183 16185

Parameter	Units	Spike Conc.	LCS Result	LCSD Result	LCS % Rec	LCSD % Rec	% Rec Limit	RPD	Max RPD Qualifiers
RISK									
Methane	ug/l	820	770	830	94	101	80-120	7.2	20
Ethane	ug/l	42	44	47	106	113	80-120	6.4	20
Ethene	ug/l	39	40	43	104	110	80-120	5.6	20

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 16214 16215 Original: 73460012

Parameter	Units	Original Result	Spike Conc	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limit	RPD	Max RPD Qualifiers
RISK										
Methane	ug/l	5800	820	8000	8000	260	263	70-130	1 1	20
Ethane	ug/l	1 3	42	56	51	130	120	70-130	8	20
Ethene	ug/l	27	39	78	77	133	129	70-130	3 1	20

## CERTIFICATE OF ANALYSIS

This report shall not be reproduced, except in full,  
without the written consent of Microseeps, Inc.





Microseeps, Inc.  
220 William Pitt Way  
Pittsburgh, PA 15238  
Phone: (412) 826-5245  
Fax: (412) 826-3433

## QUALITY CONTROL DATA

Workorder: 7346 MICHIGAN PLAZA / M01046

QC Batch:	EDON/1598	Analysis Method:	AM23G
QC Batch Method:	AM23G		
Associated Lab Samples:	73460001, 73460002, 73460003, 73460004, 73460005, 73460006, 73460007, 73460008, 73460009, 73460010, 73460011, 73460012, 73460013, 73460014, 73460015, 73460016, 73460017, 73460018, 73460019, 73460020, 73460021, 73460022		

METHOD BLANK: 16195

Parameter	Units	Blank	Reporting	
		Result	Limit	Qualifiers
<b>EDonors</b>				
Lactic Acid	mg/l	0.10 U	0.10	
Acetic Acid	mg/l	0.070 U	0.070	
Propionic Acid	mg/l	0.050 U	0.050	
Butyric Acid	mg/l	0.050 U	0.050	
Pyruvic Acid	mg/l	0.15 U	0.15	
i-Pentanoic Acid	mg/l	0.15 U	0.15	
Pentanoic Acid	mg/l	0.070 U	0.070	
i-Hexanoic Acid	mg/l	0.050 U	0.050	
Hexanoic Acid	mg/l	0.10 U	0.10	

LABORATORY CONTROL SAMPLE: 16196

Parameter	Units	Spike	LCS	LCS	% Rec
		Conc.	Result	% Rec	Limits Qualifiers
<b>EDonors</b>					
Lactic Acid	mg/l	2	1.9	95	70-130
Acetic Acid	mg/l	2	2.0	98	70-130
Propionic Acid	mg/l	2	1.9	97	70-130
Butyric Acid	mg/l	2	1.9	95	70-130
Pyruvic Acid	mg/l	2	2.0	98	70-130
i-Pentanoic Acid	mg/l	2	1.8	90	70-130
Pentanoic Acid	mg/l	2	1.8	91	70-130
i-Hexanoic Acid	mg/l	2	1.7	86	70-130
Hexanoic Acid	mg/l	2	1.7	87	70-130

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 16197                    16198                    Original: 73460012

Parameter	Units	Original	Spike	MS	MSD	MS	MSD	% Rec	Max	
		Result	Conc	Result	Result	% Rec	% Rec	Limit	RPD	RPD Qualifiers
<b>EDonors</b>										
Lactic Acid	mg/l	0.12	2	2.0	2.1	92	98	70-130	6.3	30
Acetic Acid	mg/l	0.072	2	2.0	2.0	98	97	70-130	1	30

Report ID: 7346 - 313534

Page 30 of 35

## CERTIFICATE OF ANALYSIS

This report shall not be reproduced, except in full,  
without the written consent of Microseeps, Inc.





Microseeps, Inc  
220 William Pitt Way  
Pittsburgh, PA 15238  
Phone: (412) 826-5245  
Fax: (412) 826-3433

## QUALITY CONTROL DATA

Workorder: 7346 MICHIGAN PLAZA / M01046

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 16197      16198      Original: 73460012

Parameter	Units	Original Result	Spike Conc	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limit	Max RPD	Max RPD Qualifiers
Propionic Acid	mg/l	0	2	1.9	1.9	97	96	70-130	1	30
Butyric Acid	mg/l	0	2	1.9	1.9	94	95	70-130	1.1	30
Pyruvic Acid	mg/l	0	2	2.0	2.0	99	98	70-130	1	30
i-Pentanoic Acid	mg/l	0	2	1.8	1.8	88	90	70-130	2.2	30
Pentanoic Acid	mg/l	0	2	1.8	1.8	88	91	70-130	3.4	30
i-Hexanoic Acid	mg/l	0	2	2.3	2.0	114	98	70-130	15	30
Hexanoic Acid	mg/l	0	2	1.8	1.9	89	94	70-130	5.5	30

## CERTIFICATE OF ANALYSIS

This report shall not be reproduced, except in full,  
without the written consent of Microseeps, Inc.





Microseeps, Inc.  
220 William Pitt Way  
Pittsburgh, PA 15238  
Phone: (412) 826-5245  
Fax: (412) 826-3433

## QUALITY CONTROL DATA

Workorder: 7346 MICHIGAN PLAZA / M01046

QC Batch: DISG/2618 Analysis Method: AM20GAX

QC Batch Method: AM20GAX

Associated Lab Samples: 73460013, 73460014, 73460015, 73460016, 73460017, 73460018, 73460019, 73460020

METHOD BLANK: 16223

Parameter	Units	Blank Result	Reporting		
			Limit	Qualifiers	
<b>RISK</b>					
Methane	ug/l	0.10 U	0.10		
Ethane	ug/l	0.025 U	0.025		
Ethene	ug/l	0.025 U	0.025		

LABORATORY CONTROL SAMPLE & LCSD: 16224 16225

Parameter	Units	Spike Conc	LCS Result	LCS	LCSD	LCS % Rec	LCSD % Rec	% Rec Limit	RPD	Max RPD	Qualifiers
				Result	% Rec	% Rec	% Rec	% Rec			
<b>RISK</b>											
Methane	ug/l	820	820	800	99	97	80-120	80-120	2	20	
Ethane	ug/l	42	42	44	102	105	80-120	80-120	2.9	20	
Ethene	ug/l	39	39	40	100	104	80-120	80-120	3.9	20	

## CERTIFICATE OF ANALYSIS

This report shall not be reproduced, except in full,  
without the written consent of Microseeps, Inc.





Microseeps, Inc  
220 William Pitt Way  
Pittsburgh, PA 15238  
Phone: (412) 826-5245  
Fax: (412) 826-3433

## QUALITY CONTROL DATA

Workorder: 7346 MICHIGAN PLAZA / M01046

QC Batch: EDON/1604 Analysis Method: AM23G  
QC Batch Method: AM23G  
Associated Lab Samples: 73460002, 73460003, 73460004

METHOD BLANK: 16320

Parameter	Units	Blank Result	Reporting Limit	Qualifiers
EDonors				
Acetic Acid	mg/l	0.070 U	0.070	
Propionic Acid	mg/l	0.050 U	0.050	
Hexanoic Acid	mg/l	0.10 U	0.10	

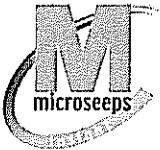
LABORATORY CONTROL SAMPLE: 16321

Parameter	Units	Spike Conc	LCS Result	LCS % Rec	% Rec Limits Qualifiers
EDonors					
Acetic Acid	mg/l	2	2.0	100	70-130
Propionic Acid	mg/l	2	2.0	98	70-130
Hexanoic Acid	mg/l	2	1.8	88	70-130

## CERTIFICATE OF ANALYSIS

This report shall not be reproduced, except in full,  
without the written consent of Microseeps, Inc.





Microseeps, Inc  
220 William Pitt Way  
Pittsburgh, PA 15238  
Phone: (412) 826-5245  
Fax: (412) 826-3433

## QUALITY CONTROL DATA CROSS REFERENCE TABLE

Workorder: 7346 MICHIGAN PLAZA / M01046

Lab ID	Sample ID	Prep Method	Prep Batch	Analysis Method	Analysis Batch
73460001	MMW-P-03S			AM20GAX	DISG/2614
73460002	MMW-P-03D			AM20GAX	DISG/2614
73460003	DUP-1			AM20GAX	DISG/2614
73460004	MMW-P-02			AM20GAX	DISG/2614
73460005	MMW-P-05			AM20GAX	DISG/2614
73460006	MMW-P-10S			AM20GAX	DISG/2614
73460007	MMW-P-10D			AM20GAX	DISG/2614
73460008	MMW-P-08			AM20GAX	DISG/2614
73460009	MMW-P-07			AM20GAX	DISG/2614
73460010	MMW-P-01			AM20GAX	DISG/2614
73460011	MMW-P-06			AM20GAX	DISG/2614
73460012	MMW-9S			AM20GAX	DISG/2615
73460021	MS			AM20GAX	DISG/2615
73460022	MSD			AM20GAX	DISG/2615
73460001	MMW-P-03S			AM23G	EDON/1598
73460002	MMW-P-03D			AM23G	EDON/1598
73460003	DUP-1			AM23G	EDON/1598
73460004	MMW-P-02			AM23G	EDON/1598
73460005	MMW-P-05			AM23G	EDON/1598
73460006	MMW-P-10S			AM23G	EDON/1598
73460007	MMW-P-10D			AM23G	EDON/1598
73460008	MMW-P-08			AM23G	EDON/1598
73460009	MMW-P-07			AM23G	EDON/1598
73460010	MMW-P-01			AM23G	EDON/1598
73460011	MMW-P-06			AM23G	EDON/1598
73460012	MMW-9S			AM23G	EDON/1598
73460013	MMW-10S			AM23G	EDON/1598
73460014	MMW-1S			AM23G	EDON/1598
73460015	MMW-8S			AM23G	EDON/1598
73460016	MMW-C-01			AM23G	EDON/1598
73460017	MMW-P-11S			AM23G	EDON/1598
73460018	MMW-P-11DR			AM23G	EDON/1598

Report ID: 7346 - 313534

Page 34 of 35

### CERTIFICATE OF ANALYSIS

This report shall not be reproduced, except in full,  
without the written consent of Microseeps, Inc.





Microseeps, Inc  
220 William Pitt Way  
Pittsburgh, PA 15238  
Phone: (412) 826-5245  
Fax: (412) 826-3433

## QUALITY CONTROL DATA CROSS REFERENCE TABLE

Workorder: 7346 MICHIGAN PLAZA / M01046

Lab ID	Sample ID	Prep Method	Prep Batch	Analysis Method	Analysis Batch
73460019	MMW-P-12S			AM23G	EDON/1598
73460020	MMW-P-12D			AM23G	EDON/1598
73460021	MS			AM23G	EDON/1598
73460022	MSD			AM23G	EDON/1598
73460013	MMW-10S			AM20GAX	DISG/2618
73460014	MMW-1S			AM20GAX	DISG/2618
73460015	MMW-8S			AM20GAX	DISG/2618
73460016	MMW-C-01			AM20GAX	DISG/2618
73460017	MMW-P-11S			AM20GAX	DISG/2618
73460018	MMW-P-11DR			AM20GAX	DISG/2618
73460019	MMW-P-12S			AM20GAX	DISG/2618
73460020	MMW-P-12D			AM20GAX	DISG/2618
73460002	MMW-P-03D			AM23G	EDON/1604
73460003	DUP-1			AM23G	EDON/1604
73460004	MMW-P-02			AM23G	EDON/1604

### CERTIFICATE OF ANALYSIS

This report shall not be reproduced, except in full,  
without the written consent of Microseeps, Inc.



**Microseeps**  
Lab. Proj. # 7346

**Microseeps** **CHAIN - OF - CUSTODY RECORD**

**Microseeps**  
COC cont. #

Phone: (412) 826-5245

Microseeps, Inc. - 220 William Pitt Way - Pittsburgh, PA 15238

Fax No.: (412) 826-3433

Company : Mandell & Assoc.  
Co. Address : 110 S. Downey Ave  
Phone # : 317-630-9660 Fax # : \_\_\_\_\_  
Proj. Manager : Mark Bresting  
Proj. Name/Number : Midiger Hole / Molode  
Sampler's signature : [Signature]

Parameters Requested		Results to :		
Sample ID	Sample Description	Sample Type Water/Vapor/Solid	Date	Time <sup>hrs</sup> <sup>min</sup>
1 MMW-P-035	WT	X	11/14/12	9:32A 4 X X
2 MMW-P-03D			10:00A	4
3 DUD 1				4
4 MMW-P-02			10:44A	4
5 MMW-P-05			11:30A	4
6 MMW-P-10S			12:06P	4
7 MMW-P-10D			12:40P	4
8 MMW-P-08			1:18P	4
9 MMW-P-07			1:47P	4
10 MMW-P-01			2:21P	4
11 MMW-P-06			2:55P	4
12 MMW-P-05			3:30P	4
				✓

Relinquished by :	Company :	Date :	Time :	Received by :	Company :	Date :	Time :
<u>A. J. Mandell</u>	<u>Mandell</u>	<u>11/20/12</u>	<u>11:50A</u>	<u>Mark Bresting</u>	<u>MS</u>	<u>11/21/12</u>	<u>0800</u>
Relinquished by :	Company :	Date :	Time :	Received by :	Company :	Date :	Time :
Relinquished by :	Company :	Date :	Time :	Received by :	Company :	Date :	Time :

WHITE COPY : Accompany Samples

YELLOW COPY : Laboratory File

PINK COPY : Submitter



# Cooler Receipt Form

Client Name: Mundell & Ass. Project: Michigan Plaza Lab Work Order: 7346  
 /M 01046

## A. Shipping/Container Information (circle appropriate response)

Courier:  FedEx UPS USPS Client Other: \_\_\_\_\_ Air bill Present:  Yes No

Tracking Number: 79411445 7712

Custody Seal on Cooler/Box Present:  Yes  No Seals Intact: Yes No

Cooler/Box Packing Material:  Bubble Wrap Absorbent Foam Other: \_\_\_\_\_

Type of Ice:  Wet  Blue  None Ice Intact:  Yes  Melted

Cooler Temperature: 30 Radiation Screened: Yes  No Chain of Custody Present:  Yes No

Comments: \_\_\_\_\_

## B. Laboratory Assignment/Log-in (check appropriate response)

	YES	NO	N/A	Comment Reference non-Conformance
Chain of Custody properly filled out	✓			
Chain of Custody relinquished	✓			
Sampler Name & Signature on COC				
Containers intact	✓			
Were samples in separate bags	✓			
Sample container labels match COC	✓			
Sample name/date and time collected				
Sufficient volume provided	✓			
Microseeps containers used	✓			
Are containers properly preserved for the requested testing? (as labeled)	✓			
If an unknown preservation state, were containers checked? Exception: VOA's coliform			✓	
Was volume for dissolved testing field filtered, as noted on the COC? Was volume received in a preserved container?		✓		

Comments: \_\_\_\_\_

Cooler contents examined/received by: HCG Date: 11-21-12

Project Manager Review: RJN Date: 11-21-12



Microseeps, Inc.  
220 William Pitt Way  
Pittsburgh, PA 15238  
Phone: (412) 826-5245  
Fax: (412) 826-3433

January 14, 2013

Merle Tebbe  
Mundell & Associates, Inc.  
110 South Downey Ave.  
Indianapolis, IN 46219

RE: MI PLAZA / M01046

*Microseeps Workorder: 7756*

Dear Merle Tebbe:

Enclosed are the analytical results for sample(s) received by the laboratory on Friday, January 04, 2013. Results reported herein conform to the most current NELAC standards, where applicable, unless otherwise narrated in the body of the report.

If you have any questions concerning this report, please feel free to contact me.

Sincerely,

 JRUGH 1/15/13

Julianne Rugh 01/14/2013  
jrugh@microseeps.com

Customer Service Representative

Enclosures

As a valued client we would appreciate your comments on our service.

Please email info@microseeps.com.

Total Number of Pages 12

Report ID: 7756 - 331518

Page 1 of 11

#### CERTIFICATE OF ANALYSIS

This report shall not be reproduced, except in full,  
without the written consent of Microseeps, Inc.





Microseeps, Inc  
220 William Pitt Way  
Pittsburgh, PA 15238  
Phone: (412) 826-5245  
Fax: (412) 826-3433

## LABORATORY ACCREDITATIONS & CERTIFICATIONS

<b>Accreditor:</b>	Pennsylvania Department of Environmental Protection, Bureau of Laboratories	
<b>Accreditation ID:</b>	02-00538	
<b>Scope:</b>	NELAP Non-Potable Water and Solid & Hazardous Waste	
<b>Accreditor:</b>	NELAP: State of Florida, Department of Health, Bureau of Laboratories	
<b>Accreditation ID:</b>	E87832	
<b>Scope:</b>	Clean Water Act (CWA)	Resource Conservation and Recovery Act (RCRA)
<b>Accreditor:</b>	South Carolina Department of Health and Environmental Control, Office of Environmental Laboratory Certification	
<b>Accreditation ID:</b>	89009003	
<b>Scope:</b>	Clean Water Act (CWA); Resource Conservation and Recovery Act (RCRA)	
<b>Accreditor:</b>	NELAP: State of Louisiana, Department of Environmental Quality	
<b>Accreditation ID:</b>	04104	
<b>Scope:</b>	Solid and Chemical Materials; Non-Potable Water	
<b>Accreditor:</b>	NELAP: New Jersey, Department of Environmental Protection	
<b>Accreditation ID:</b>	PA026	
<b>Scope:</b>	Non-Potable Water; Solid and Chemical Materials	
<b>Accreditor:</b>	NELAP: New York, Department of Health Wadsworth Center	
<b>Accreditation ID:</b>	11815	
<b>Scope:</b>	Non-Potable Water; Solid and Hazardous Waste	
<b>Accreditor:</b>	State of Connecticut, Department of Public Health, Division of Environmental Health	
<b>Accreditation ID:</b>	PH-0263	
<b>Scope:</b>	Clean Water Act (CWA) Resource Conservation and Recovery Act (RCRA)	
<b>Accreditor:</b>	NELAP: Texas, Commission on Environmental Quality	
<b>Accreditation ID:</b>	T104704453-09-TX	
<b>Scope:</b>	Non-Potable Water	
<b>Accreditor:</b>	State of New Hampshire	
<b>Accreditation ID:</b>	299409	
<b>Scope:</b>	Non-potable water	
<b>Accreditor:</b>	State of Georgia	
<b>Accreditation ID:</b>	Chapter 391-3-26	
<b>Scope:</b>	As per the Georgia EPD Rules and Regulations for Commercial Laboratories, Microseeps is accredited by the Pennsylvania Department of Environmental Protection Bureau of Laboratories under the National Environmental Laboratory Approval Program (NELAC).	

### CERTIFICATE OF ANALYSIS

This report shall not be reproduced, except in full,  
without the written consent of Microseeps, Inc.





Microseeps, Inc  
220 William Pitt Way  
Pittsburgh, PA 15236  
Phone: (412) 826-5245  
Fax: (412) 826-3433

## SAMPLE SUMMARY

Workorder: 7756 MI PLAZA / M01046

Lab ID	Sample ID	Matrix	Date Collected	Date Received
77560001	B-1	Vapor	12/31/2012 14:31	1/4/2013 11:00
77560002	B-2	Vapor	12/31/2012 14:22	1/4/2013 11:00
77560003	B-3	Vapor	12/31/2012 14:12	1/4/2013 11:00
77560004	B-4	Vapor	12/31/2012 14:06	1/4/2013 11:00

## CERTIFICATE OF ANALYSIS

This report shall not be reproduced, except in full,  
without the written consent of Microseeps, Inc.





Microseeps, Inc  
220 William Pitt Way  
Pittsburgh, PA 15238  
Phone: (412) 826-5245  
Fax: (412) 826-3433

## ANALYTICAL RESULTS

Workorder: 7756 MI PLAZA / M01046

Lab ID: 77560001 Date Received: 1/4/2013 11:00 Matrix: Vapor  
Sample ID: B-1 Date Collected: 12/31/2012 14:31

Parameters	Results	Units	PQL	MDL	DF Prepared	By	Analyzed	By	Qual
<b>RISK - MICR</b>									
Analysis Desc: AM4.02 Vapors      Analytical Method: AM4.02 Vapors									
Vinyl Chloride	0.33J	ppmv	1.0	0.095	1			1/8/2013 10:37	SL
1,1-Dichloroethene	0.010 U	ppmv	0.010	0.0010	1			1/8/2013 10:37	SL
Methylene Chloride	0.52J	ppmv	2.0	0.19	1			1/8/2013 10:37	SL
trans-1,2-Dichloroethene	0.010 U	ppmv	0.010	0.0080	1			1/8/2013 10:37	SL
1,1-Dichloroethane	0.020 U	ppmv	0.020	0.0040	1			1/8/2013 10:37	SL
cis-1,2-Dichloroethene	0.020 U	ppmv	0.020	0.0070	1			1/8/2013 10:37	SL
Chloroform	0.0025J	ppmv	0.0050	0.0010	1			1/8/2013 10:37	SL
1,1,1-Trichloroethane	0.0050 U	ppmv	0.0050	0.0010	1			1/8/2013 10:37	SL
Carbon Tetrachloride	0.0050 U	ppmv	0.0050	0.0010	1			1/8/2013 10:37	SL
Trichloroethene	0.0021J	ppmv	0.010	0.0010	1			1/8/2013 10:37	SL
Tetrachloroethene	0.24	ppmv	0.010	0.0010	1			1/8/2013 10:37	SL

## CERTIFICATE OF ANALYSIS

This report shall not be reproduced, except in full,  
without the written consent of Microseeps, Inc.





Microseeps, Inc  
220 William Pitt Way  
Pittsburgh, PA 15238  
Phone: (412) 826-5245  
Fax: (412) 826-3433

## ANALYTICAL RESULTS

Workorder: 7756 MI PLAZA / M01046

Lab ID: **77560002** Date Received: 1/4/2013 11:00 Matrix: Vapor  
Sample ID: **B-2** Date Collected: 12/31/2012 14:22

Parameters	Results	Units	PQL	MDL	DF Prepared	By	Analyzed	By	Qual
<b>RISK - MICR</b>									
Analysis Desc: AM4.02 Vapors									
Vinyl Chloride	<b>1.6</b>	ppmv	1.0	0.095	1			1/8/2013 11:44	SL
1,1-Dichloroethene	<b>0.010</b>	U ppmv	0.010	0.0010	1			1/8/2013 11:44	SL
Methylene Chloride	<b>3.6</b>	ppmv	2.0	0.19	1			1/8/2013 11:44	SL
trans-1,2-Dichloroethene	<b>0.010</b>	U ppmv	0.010	0.0080	1			1/8/2013 11:44	SL
1,1-Dichloroethane	<b>0.020</b>	U ppmv	0.020	0.0040	1			1/8/2013 11:44	SL
cis-1,2-Dichloroethene	<b>0.020</b>	U ppmv	0.020	0.0070	1			1/8/2013 11:44	SL
Chloroform	<b>0.0012J</b>	ppmv	0.0050	0.0010	1			1/8/2013 11:44	SL
1,1,1-Trichloroethane	<b>0.0050</b>	U ppmv	0.0050	0.0010	1			1/8/2013 11:44	SL
Carbon Tetrachloride	<b>0.0050</b>	U ppmv	0.0050	0.0010	1			1/8/2013 11:44	SL
Trichloroethene	<b>0.0019J</b>	ppmv	0.010	0.0010	1			1/8/2013 11:44	SL
Tetrachloroethene	<b>0.19</b>	ppmv	0.010	0.0010	1			1/8/2013 11:44	SL

## CERTIFICATE OF ANALYSIS

This report shall not be reproduced, except in full,  
without the written consent of Microseeps, Inc.





Microseeps, Inc  
220 William Pitt Way  
Pittsburgh, PA 15238  
Phone: (412) 826-5245  
Fax: (412) 826-3433

## ANALYTICAL RESULTS

Workorder: 7756 MI PLAZA / M01046

Lab ID: 77560003 Date Received: 1/4/2013 11:00 Matrix: Vapor  
Sample ID: B-3 Date Collected: 12/31/2012 14:12

Parameters	Results	Units	PQL	MDL	DF Prepared	By	Analyzed	By	Qual
<b>RISK - MICR</b>									
Analysis Desc: AM4.02 Vapors      Analytical Method: AM4.02 Vapors									
Vinyl Chloride	0.23J	ppmv	1.0	0.095	1			1/8/2013 12:52	SL
1,1-Dichloroethene	0.010 U	ppmv	0.010	0.0010	1			1/8/2013 12:52	SL
Methylene Chloride	0.59J	ppmv	2.0	0.19	1			1/8/2013 12:52	SL
trans-1,2-Dichloroethene	0.010 U	ppmv	0.010	0.0080	1			1/8/2013 12:52	SL
1,1-Dichloroethane	0.020 U	ppmv	0.020	0.0040	1			1/8/2013 12:52	SL
cis-1,2-Dichloroethene	0.020 U	ppmv	0.020	0.0070	1			1/8/2013 12:52	SL
Chloroform	0.0050 U	ppmv	0.0050	0.0010	1			1/8/2013 12:52	SL
1,1,1-Trichloroethane	0.0050 U	ppmv	0.0050	0.0010	1			1/8/2013 12:52	SL
Carbon Tetrachloride	0.0050 U	ppmv	0.0050	0.0010	1			1/8/2013 12:52	SL
Trichloroethene	0.0028J	ppmv	0.010	0.0010	1			1/8/2013 12:52	SL
Tetrachloroethene	0.14	ppmv	0.010	0.0010	1			1/8/2013 12:52	SL

## CERTIFICATE OF ANALYSIS

This report shall not be reproduced, except in full,  
without the written consent of Microseeps, Inc.





Microseeps, Inc.  
220 William Pitt Way  
Pittsburgh, PA 15238  
Phone: (412) 826-5245  
Fax: (412) 826-3433

## ANALYTICAL RESULTS

Workorder: 7756 MI PLAZA / M01046

Lab ID: 77560004 Date Received: 1/4/2013 11:00 Matrix: Vapor  
Sample ID: B-4 Date Collected: 12/31/2012 14:06

Parameters	Results	Units	PQL	MDL	DF Prepared	By	Analyzed	By	Qual
<b>RISK - MICR</b>									
Analysis Desc: AM4.02 Vapors      Analytical Method: AM4.02 Vapors									
Vinyl Chloride	1.0	U ppmv	1.0	0.095	1		1/8/2013 14:00	SL	
1,1-Dichloroethene	0.010	U ppmv	0.010	0.0010	1		1/8/2013 14:00	SL	
Methylene Chloride	2.0	U ppmv	2.0	0.19	1		1/8/2013 14:00	SL	
trans-1,2-Dichloroethene	0.010	U ppmv	0.010	0.0080	1		1/8/2013 14:00	SL	
1,1-Dichloroethane	0.020	U ppmv	0.020	0.0040	1		1/8/2013 14:00	SL	
cis-1,2-Dichloroethene	0.020	U ppmv	0.020	0.0070	1		1/8/2013 14:00	SL	
Chloroform	0.0021J	ppmv	0.0050	0.0010	1		1/8/2013 14:00	SL	
1,1,1-Trichloroethane	0.0050	U ppmv	0.0050	0.0010	1		1/8/2013 14:00	SL	
Carbon Tetrachloride	0.0050	U ppmv	0.0050	0.0010	1		1/8/2013 14:00	SL	
Trichloroethene	0.010	U ppmv	0.010	0.0010	1		1/8/2013 14:00	SL	
Tetrachloroethene	0.0019J	ppmv	0.010	0.0010	1		1/8/2013 14:00	SL	

## CERTIFICATE OF ANALYSIS

This report shall not be reproduced, except in full,  
without the written consent of Microseeps, Inc.





Microseeps, Inc  
220 William Pitt Way  
Pittsburgh, PA 15238  
Phone: (412) 826-5245  
Fax: (412) 826-3433

## ANALYTICAL RESULTS QUALIFIERS

Workorder: 7756 MI PLAZA / M01046

### PARAMETER QUALIFIERS

MDL	Method Detection Limit. Can be used synonymously with LOD; Limit Of Detection.
PQL	Practical Quantitation Limit. Can be used synonymously with LOQ; Limit Of Quantitation.
ND	Not detected at or above reporting limit.
DF	Dilution Factor.
S	Surrogate.
RPD	Relative Percent Difference.
% Rec	Percent Recovery.
U	Indicates the compound was analyzed for, but not detected at or above the noted concentration.
J	Estimated concentration greater than the set method detection limit (MDL) and less than the set reporting limit (PQL).

### CERTIFICATE OF ANALYSIS

This report shall not be reproduced, except in full,  
without the written consent of Microseeps, Inc.





Microseeps, Inc  
220 William Pitt Way  
Pittsburgh, PA 15238  
Phone: (412) 826-5245  
Fax: (412) 826-3433

## QUALITY CONTROL DATA

Workorder: 7756 MI PLAZA / M01046

QC Batch: VAP/1326 Analysis Method: AM4.02 Vapors  
QC Batch Method: AM4.02 Vapors  
Associated Lab Samples: 77560001, 77560002, 77560003, 77560004

METHOD BLANK: 17252

Parameter	Units	Blank Result	Reporting	
			Limit	Qualifiers
<b>RISK</b>				
1,1-Dichloroethene	ppmv	0.010 U	0.010	
trans-1,2-Dichloroethene	ppmv	0.010 U	0.010	
1,1-Dichloroethane	ppmv	0.020 U	0.020	
cis-1,2-Dichloroethene	ppmv	0.020 U	0.020	
Chloroform	ppmv	0.0050 U	0.0050	
1,1,1-Trichloroethane	ppmv	0.0050 U	0.0050	
Carbon Tetrachloride	ppmv	0.0050 U	0.0050	
Trichloroethene	ppmv	0.010 U	0.010	
Tetrachloroethene	ppmv	0.010 U	0.010	

METHOD BLANK: 17253

Parameter	Units	Blank Result	Reporting	
			Limit	Qualifiers
<b>RISK</b>				
Vinyl Chloride	ppmv	1.0 U	1.0	
Methylene Chloride	ppmv	2.0 U	2.0	

LABORATORY CONTROL SAMPLE & LCSD: 17254 17256

Parameter	Units	Spike Conc.	LCS Result	LCSD Result	LCS % Rec	LCSD % Rec	% Rec Limit	RPD	Max RPD Qualifiers
					% Rec	% Rec			Qualifiers
<b>RISK</b>									
1,1-Dichloroethene	ppmv	0.65	0.66	0.66	102	102	75-125	0	20
trans-1,2-Dichloroethene	ppmv	0.65	0.72	0.72	111	112	75-125	0.9	20
1,1-Dichloroethane	ppmv	0.64	0.80	0.78	125	122	75-125	2.4	20
cis-1,2-Dichloroethene	ppmv		0.020 U	0.020 U					
Chloroform	ppmv	0.53	0.59	0.58	111	110	75-125	0.9	20
1,1,1-Trichloroethane	ppmv	0.47	0.52	0.52	112	111	75-125	0.9	20
Carbon Tetrachloride	ppmv	0.41	0.45	0.45	111	110	75-125	0.9	20
Trichloroethene	ppmv	0.48	0.54	0.54	113	113	75-125	0	20
Tetrachloroethene	ppmv		0.010 U	0.010 U					

## CERTIFICATE OF ANALYSIS

This report shall not be reproduced, except in full,  
without the written consent of Microseeps, Inc.





Microseeps, Inc  
220 William Pitt Way  
Pittsburgh, PA 15238  
Phone: (412) 826-5245  
Fax: (412) 826-3433

## QUALITY CONTROL DATA

Workorder: 7756 MI PLAZA / M01046

LABORATORY CONTROL SAMPLE & LCSD: 17255 17257

Parameter	Units	Spike Conc.	LCS Result	LCSD Result	LCS % Rec	LCSD % Rec	% Rec Limit	RPD	Max RPD	Qualifiers
RISK										
Vinyl Chloride	ppmv		1.0 U	1.0 U						
Methylene Chloride	ppmv		0.74J	0.77J						

## CERTIFICATE OF ANALYSIS

This report shall not be reproduced, except in full,  
without the written consent of Microseeps, Inc.





Microseeps, Inc  
220 William Pitt Way  
Pittsburgh, PA 15238  
Phone: (412) 826-5245  
Fax: (412) 826-3433

## QUALITY CONTROL DATA CROSS REFERENCE TABLE

Workorder: 7756 MI PLAZA / M01046

Lab ID	Sample ID	Prep Method	Prep Batch	Analysis Method	Analysis Batch
77560001	B-1			AM4.02 Vapors	VAP/1326
77560002	B-2			AM4.02 Vapors	VAP/1326
77560003	B-3			AM4.02 Vapors	VAP/1326
77560004	B-4			AM4.02 Vapors	VAP/1326

## CERTIFICATE OF ANALYSIS

This report shall not be reproduced, except in full,  
without the written consent of Microseeps, Inc.





Microseeps  
Lab. Proj. #

# CHAIN - OF - CUSTODY RECORD

Microseeps  
COC cont. #

Phone: (412) 826-5245

Microseeps, Inc. - 220 William Pitt Way - Pittsburgh, PA 15238

Fax No. : (412) 826-3433

Mundell & Assoc.

110 S. Downing Ave Indianapolis 46226

Phone # : 317-283-9060

Fax # :

Proj. Manager :

Mark Bretting

Proj. Name/Number : MI 919e / Major

Sampler's signature : A. S. Mundell

## Parameters Requested

Results to :

Mark Bretting  
 D Mundell

Invoice to : Mark Bretting

D Mundell

## Sample Description

Remarks :

Water/Vapor/Solid

Date

Time

#<sup>samples</sup>

Vapor

12/31/92

2:31p

2

Y

1

1

2:24p

2

X

✓

✓

2:12p

2

Y

✓

✓

2:06p

2

Y

Relinquished by : Mark Bretting Date : 1-3-92 Time : Received by : Mark Bretting Company : MS

Relinquished by : Mark Bretting Date : Time : Received by : Company :

Relinquished by : Mark Bretting Date : Time : Received by : Company :

Relinquished by : Mark Bretting Date : 1-4-92 Time : Received by : Mark Bretting Company : MS

Relinquished by : Mark Bretting Date : Time : Received by : Company :

Relinquished by : Mark Bretting Date : Time : Received by : Company :



Microseeps, Inc  
220 William Pitt Way  
Pittsburgh, PA 15238  
Phone: (412) 826-5245  
Fax: (412) 826-3433

January 14, 2013

Merle Tebbe  
Mundell & Associates, Inc.  
110 South Downey Ave.  
Indianapolis, IN 46219

RE: MICHIGAN PLAZA

*Microseeps Workorder: 7731*

Dear Merle Tebbe:

Enclosed are the analytical results for sample(s) received by the laboratory on Monday, December 31, 2012. Results reported herein conform to the most current NELAC standards, where applicable, unless otherwise narrated in the body of the report.

If you have any questions concerning this report, please feel free to contact me.

Sincerely,

 (R) 1/15/13

Julianne Rugh 01/14/2013  
jrugh@microseeps.com

Customer Service Representative

Enclosures

As a valued client we would appreciate your comments on our service.

Please email info@microseeps.com.

Total Number of Pages 11

Report ID: 7731 - 331500

Page 1 of 10

**CERTIFICATE OF ANALYSIS**

This report shall not be reproduced, except in full,  
without the written consent of Microseeps, Inc.





Microseeps, Inc  
220 William Pitt Way  
Pittsburgh, PA 15238  
Phone: (412) 826-5245  
Fax: (412) 826-3433

## LABORATORY ACCREDITATIONS & CERTIFICATIONS

<b>Accreditor:</b>	Pennsylvania Department of Environmental Protection, Bureau of Laboratories	
<b>Accreditation ID:</b>	02-00538	
<b>Scope:</b>	NELAP Non-Potable Water and Solid & Hazardous Waste	
<b>Accreditor:</b>	NELAP: State of Florida, Department of Health, Bureau of Laboratories	
<b>Accreditation ID:</b>	E87832	
<b>Scope:</b>	Clean Water Act (CWA)	Resource Conservation and Recovery Act (RCRA)
<b>Accreditor:</b>	South Carolina Department of Health and Environmental Control, Office of Environmental Laboratory Certification	
<b>Accreditation ID:</b>	89009003	
<b>Scope:</b>	Clean Water Act (CWA); Resource Conservation and Recovery Act (RCRA)	
<b>Accreditor:</b>	NELAP: State of Louisiana, Department of Environmental Quality	
<b>Accreditation ID:</b>	04104	
<b>Scope:</b>	Solid and Chemical Materials; Non-Potable Water	
<b>Accreditor:</b>	NELAP: New Jersey, Department of Environmental Protection	
<b>Accreditation ID:</b>	PA026	
<b>Scope:</b>	Non-Potable Water; Solid and Chemical Materials	
<b>Accreditor:</b>	NELAP: New York, Department of Health Wadsworth Center	
<b>Accreditation ID:</b>	11815	
<b>Scope:</b>	Non-Potable Water; Solid and Hazardous Waste	
<b>Accreditor:</b>	State of Connecticut, Department of Public Health, Division of Environmental Health	
<b>Accreditation ID:</b>	PH-0263	
<b>Scope:</b>	Clean Water Act (CWA) Resource Conservation and Recovery Act (RCRA)	
<b>Accreditor:</b>	NELAP: Texas, Commission on Environmental Quality	
<b>Accreditation ID:</b>	T104704453-09-TX	
<b>Scope:</b>	Non-Potable Water	
<b>Accreditor:</b>	State of New Hampshire	
<b>Accreditation ID:</b>	299409	
<b>Scope:</b>	Non-potable water	
<b>Accreditor:</b>	State of Georgia	
<b>Accreditation ID:</b>	Chapter 391-3-26	
<b>Scope:</b>	As per the Georgia EPD Rules and Regulations for Commercial Laboratories, Microseeps is accredited by the Pennsylvania Department of Environmental Protection Bureau of Laboratories under the National Environmental Laboratory Approval Program (NELAC).	

## CERTIFICATE OF ANALYSIS

This report shall not be reproduced, except in full,  
without the written consent of Microseeps, Inc.





Microseeps, Inc  
220 William Pitt Way  
Pittsburgh, PA 15238  
Phone: (412) 826-5245  
Fax: (412) 826-3433

## SAMPLE SUMMARY

Workorder: 7731 MICHIGAN PLAZA

Lab ID	Sample ID	Matrix	Date Collected	Date Received
77310001	B-5	Vapor	12/27/2012 15:30	12/31/2012 13:35
77310002	B-6	Vapor	12/27/2012 15:45	12/31/2012 13:35
77310003	B-7	Vapor	12/27/2012 15:55	12/31/2012 13:35

## CERTIFICATE OF ANALYSIS

This report shall not be reproduced, except in full,  
without the written consent of Microseeps, Inc.





Microseeps, Inc.  
220 William Pitt Way  
Pittsburgh, PA 15238  
Phone: (412) 826-5245  
Fax: (412) 826-3433

## ANALYTICAL RESULTS

Workorder: 7731 MICHIGAN PLAZA

Lab ID: 77310001 Date Received: 12/31/2012 13:35 Matrix: Vapor  
Sample ID: B-5 Date Collected: 12/27/2012 15:30

Parameters	Results	Units	PQL	MDL	DF Prepared	By	Analyzed	By	Qual
<b>RISK - MICR</b>									
Analysis Desc: AM4.02 Vapors      Analytical Method: AM4.02 Vapors									
Vinyl Chloride	0.20J	ppmv	1.0	0.095	1			1/8/2013 02:42	SL
1,1-Dichloroethene	0.010 U	ppmv	0.010	0.0010	1			1/8/2013 02:42	SL
Methylene Chloride	2.0 U	ppmv	2.0	0.19	1			1/8/2013 02:42	SL
trans-1,2-Dichloroethene	0.010 U	ppmv	0.010	0.0080	1			1/8/2013 02:42	SL
1,1-Dichloroethane	0.020 U	ppmv	0.020	0.0040	1			1/8/2013 02:42	SL
cis-1,2-Dichloroethene	0.020 U	ppmv	0.020	0.0070	1			1/8/2013 02:42	SL
Chloroform	0.0050 U	ppmv	0.0050	0.0010	1			1/8/2013 02:42	SL
1,1,1-Trichloroethane	0.0050 U	ppmv	0.0050	0.0010	1			1/8/2013 02:42	SL
Carbon Tetrachloride	0.0050 U	ppmv	0.0050	0.0010	1			1/8/2013 02:42	SL
Trichloroethene	0.0011J	ppmv	0.010	0.0010	1			1/8/2013 02:42	SL
Tetrachloroethene	0.017	ppmv	0.010	0.0010	1			1/8/2013 02:42	SL

## CERTIFICATE OF ANALYSIS

This report shall not be reproduced, except in full,  
without the written consent of Microseeps, Inc.





Microseeps, Inc  
220 William Pitt Way  
Pittsburgh, PA 15238  
Phone: (412) 826-5245  
Fax: (412) 826-3433

## ANALYTICAL RESULTS

Workorder: 7731 MICHIGAN PLAZA

Lab ID: **77310002** Date Received: 12/31/2012 13:35 Matrix: Vapor  
Sample ID: **B-6** Date Collected: 12/27/2012 15:45

Parameters	Results	Units	PQL	MDL	DF Prepared	By	Analyzed	By	Qual
<b>RISK - MICR</b>									
Analysis Desc: AM4.02 Vapors      Analytical Method: AM4.02 Vapors									
Vinyl Chloride	<b>0.14</b> J	ppmv	1.0	0.095	1			1/8/2013 03:50	SL
1,1-Dichloroethene	<b>0.010</b> U	ppmv	0.010	0.0010	1			1/8/2013 03:50	SL
Methylene Chloride	<b>2.0</b> U	ppmv	2.0	0.19	1			1/8/2013 03:50	SL
trans-1,2-Dichloroethene	<b>0.010</b> U	ppmv	0.010	0.0080	1			1/8/2013 03:50	SL
1,1-Dichloroethane	<b>0.020</b> U	ppmv	0.020	0.0040	1			1/8/2013 03:50	SL
cis-1,2-Dichloroethene	<b>0.020</b> U	ppmv	0.020	0.0070	1			1/8/2013 03:50	SL
Chloroform	<b>0.0050</b> U	ppmv	0.0050	0.0010	1			1/8/2013 03:50	SL
1,1,1-Trichloroethane	<b>0.0050</b> U	ppmv	0.0050	0.0010	1			1/8/2013 03:50	SL
Carbon Tetrachloride	<b>0.0050</b> U	ppmv	0.0050	0.0010	1			1/8/2013 03:50	SL
Trichloroethene	<b>0.010</b> U	ppmv	0.010	0.0010	1			1/8/2013 03:50	SL
Tetrachloroethene	<b>0.024</b> ppmv		0.010	0.0010	1			1/8/2013 03:50	SL

## CERTIFICATE OF ANALYSIS

This report shall not be reproduced, except in full,  
without the written consent of Microseeps, Inc.





Microseeps, Inc  
220 William Pitt Way  
Pittsburgh, PA 15238  
Phone: (412) 826-5245  
Fax: (412) 826-3433

## ANALYTICAL RESULTS

Workorder: 7731 MICHIGAN PLAZA

Lab ID: 77310003 Date Received: 12/31/2012 13:35 Matrix: Vapor  
Sample ID: B-7 Date Collected: 12/27/2012 15:55

Parameters	Results	Units	PQL	MDL	DF Prepared	By	Analyzed	By	Qual
<b>RISK - MICR</b>									
Analysis Desc: AM4.02 Vapors      Analytical Method: AM4.02 Vapors									
Vinyl Chloride	0.15	J ppmv	1.0	0.095	1			1/8/2013 04:57	SL
1,1-Dichloroethene	0.010	U ppmv	0.010	0.0010	1			1/8/2013 04:57	SL
Methylene Chloride	2.0	U ppmv	2.0	0.19	1			1/8/2013 04:57	SL
trans-1,2-Dichloroethene	0.010	U ppmv	0.010	0.0080	1			1/8/2013 04:57	SL
1,1-Dichloroethane	0.020	U ppmv	0.020	0.0040	1			1/8/2013 04:57	SL
cis-1,2-Dichloroethene	0.020	U ppmv	0.020	0.0070	1			1/8/2013 04:57	SL
Chloroform	0.0050	U ppmv	0.0050	0.0010	1			1/8/2013 04:57	SL
1,1,1-Trichloroethane	0.0050	U ppmv	0.0050	0.0010	1			1/8/2013 04:57	SL
Carbon Tetrachloride	0.0050	U ppmv	0.0050	0.0010	1			1/8/2013 04:57	SL
Trichloroethene	0.010	U ppmv	0.010	0.0010	1			1/8/2013 04:57	SL
Tetrachloroethene	0.010	U ppmv	0.010	0.0010	1			1/8/2013 04:57	SL

## CERTIFICATE OF ANALYSIS

This report shall not be reproduced, except in full,  
without the written consent of Microseeps, Inc.





Microseeps, Inc  
220 William Pitt Way  
Pittsburgh, PA 15238  
Phone: (412) 826-5245  
Fax: (412) 826-3433

## ANALYTICAL RESULTS QUALIFIERS

Workorder: 7731 MICHIGAN PLAZA

### PARAMETER QUALIFIERS

- MDL Method Detection Limit. Can be used synonymously with LOD; Limit Of Detection.
- PQL Practical Quanitation Limit. Can be used synonymously with LOQ; Limit Of Quantitation.
- ND Not detected at or above reporting limit.
- DF Dilution Factor.
- S Surrogate.
- RPD Relative Percent Difference.
- % Rec Percent Recovery.
- U Indicates the compound was analyzed for, but not detected at or above the noted concentration.
- J Estimated concentration greater than the set method detection limit (MDL) and less than the set reporting limit (PQL).

### CERTIFICATE OF ANALYSIS

This report shall not be reproduced, except in full,  
without the written consent of Microseeps, Inc.





Microseeps, Inc  
220 William Pitt Way  
Pittsburgh, PA 15238  
Phone: (412) 826-5245  
Fax: (412) 826-3433

## QUALITY CONTROL DATA

Workorder: 7731 MICHIGAN PLAZA

QC Batch: VAP/1326 Analysis Method: AM4.02 Vapors  
QC Batch Method: AM4.02 Vapors  
Associated Lab Samples: 77310001, 77310002, 77310003

METHOD BLANK: 17252

Parameter	Units	Blank Result	Reporting	
			Limit	Qualifiers
<b>RISK</b>				
1,1-Dichloroethene	ppmv	0.010 U	0.010	
trans-1,2-Dichloroethene	ppmv	0.010 U	0.010	
1,1-Dichloroethane	ppmv	0.020 U	0.020	
cis-1,2-Dichloroethene	ppmv	0.020 U	0.020	
Chloroform	ppmv	0.0050 U	0.0050	
1,1,1-Trichloroethane	ppmv	0.0050 U	0.0050	
Carbon Tetrachloride	ppmv	0.0050 U	0.0050	
Trichloroethene	ppmv	0.010 U	0.010	
Tetrachloroethene	ppmv	0.010 U	0.010	

METHOD BLANK: 17253

Parameter	Units	Blank Result	Reporting	
			Limit	Qualifiers
<b>RISK</b>				
Vinyl Chloride	ppmv	1.0 U	1.0	
Methylene Chloride	ppmv	2.0 U	2.0	

LABORATORY CONTROL SAMPLE & LCSD: 17254 17256

Parameter	Units	Spike Conc.	LCS Result	LCSD Result	LCS % Rec	LCSD % Rec	% Rec Limit	RPD	Max RPD Qualifiers
<b>RISK</b>									
1,1-Dichloroethene	ppmv	0.65	0.66	0.66	102	102	75-125	0	20
trans-1,2-Dichloroethene	ppmv	0.65	0.72	0.72	111	112	75-125	0.9	20
1,1-Dichloroethane	ppmv	0.64	0.80	0.78	125	122	75-125	2.4	20
cis-1,2-Dichloroethene	ppmv		0.020 U	0.020 U					
Chloroform	ppmv	0.53	0.59	0.58	111	110	75-125	0.9	20
1,1,1-Trichloroethane	ppmv	0.47	0.52	0.52	112	111	75-125	0.9	20
Carbon Tetrachloride	ppmv	0.41	0.45	0.45	111	110	75-125	0.9	20
Trichloroethene	ppmv	0.48	0.54	0.54	113	113	75-125	0	20
Tetrachloroethene	ppmv		0.010 U	0.010 U					

## CERTIFICATE OF ANALYSIS

This report shall not be reproduced, except in full,  
without the written consent of Microseeps, Inc.





Microseeps, Inc  
220 William Pitt Way  
Pittsburgh, PA 15238  
Phone: (412) 826-5245  
Fax: (412) 826-3433

## QUALITY CONTROL DATA

Workorder: 7731 MICHIGAN PLAZA

LABORATORY CONTROL SAMPLE & LCSD: 17255 17257

Parameter	Units	Spike Conc.	LCS Result	LCSD Result	LCS % Rec	LCSD % Rec	% Rec Limit	RPD	Max RPD Qualifiers
RISK									
Vinyl Chloride	ppmv		1.0 U	1.0 U					
Methylene Chloride	ppmv		0.74J	0.77J					

## CERTIFICATE OF ANALYSIS

This report shall not be reproduced, except in full,  
without the written consent of Microseeps, Inc.





Microseeps, Inc  
220 William Pitt Way  
Pittsburgh, PA 15238  
Phone: (412) 826-5245  
Fax: (412) 826-3433

### QUALITY CONTROL DATA CROSS REFERENCE TABLE

Workorder: 7731 MICHIGAN PLAZA

Lab ID	Sample ID	Prep Method	Prep Batch	Analysis Method	Analysis Batch
77310001	B-5			AM4.02 Vapors	VAP/1326
77310002	B-6			AM4.02 Vapors	VAP/1326
77310003	B-7			AM4.02 Vapors	VAP/1326

### CERTIFICATE OF ANALYSIS

This report shall not be reproduced, except in full,  
without the written consent of Microseeps, Inc.





Microseeps  
Lab. Proj. #

773

## **CHAIN - OFF - CUSTODY RECORD**

**Microseeps  
COC cont. #**

Phone: (412) 826-5245

**Microseps, Inc.** - 220 William Pitt Way - Pittsburgh, PA 15238

Mindell is Assoc. Inv.

Mindell & Assoc. Inc  
110 S. Downey Ave. Judds, TN

317-1620-0365 Fax#: .

卷之三

### **Proj. Manager :**

Name: \_\_\_\_\_

[8]. NAME/NUMBER : ██████████

Commentaries

Samplers signature:

100

Sample ID	Sample Description	Sample Type		Date	Time	# Temp	Remarks:
		Water	Vapor				
B-5	Vapor	✓		12/27/12	3:30 p	2	X
B-6	Vapor	✓		12/27/12	3:45 p	2	X
B-7	Vapor		✓	12/27/12	3:55 p	2	X

<u>Relinquished by :</u>	Company : <u>Musical</u>	Date : <u>12-12</u>	Time : <u>4:49</u>	Received by : <u>D.W.H.</u>	Company : <u>Microsoft</u>	Date : <u>12/31/12</u>	Time : <u>13:35</u>
<u>Relinquished by :</u>	Company : <u></u>	Date : <u></u>	Time : <u></u>	Received by : <u></u>	Company : <u></u>	Date : <u></u>	Time : <u></u>
<u>Relinquished by :</u>	Company : <u></u>	Date : <u></u>	Time : <u></u>	Received by : <u></u>	Company : <u></u>	Date : <u></u>	Time : <u></u>

## **APPENDIX B**

Air Mitigation Systems: Pounds of Contaminants Removed

**APPENDIX B**  
**Air Mitigation System - Historical Air Analytical Results**  
**Michigan Plaza**  
**Indianapolis, Indiana**  
**MUNDELL Project No.: M01046**

Sample Date	Perchloroethylene (PCE)											
	B-1	B-2	B-3	B-4	B-1	B-2	B-3	B-4	B-1	B-2	B-3	B-4
	(ppmv)				(ppm)				( $\mu\text{g}/\text{m}^3$ )			
9/21/2006	0.6300	0.7900	0.6700	0.2800	0.0043	0.0054	0.0046	0.0019	4281.48	5368.84	4553.32	1902.88
10/6/2006	0.8800	0.6700	0.9700	0.3100	0.0060	0.0046	0.0066	0.0021	5980.48	4553.32	6592.12	2106.76
10/13/2006	0.6800	0.3600	0.5200	0.2100	0.0046	0.0024	0.0035	0.0014	4621.28	2446.56	3533.92	1427.16
10/20/2006	0.8700	0.5500	0.8900	0.2200	0.0059	0.0037	0.0060	0.0015	5912.52	3737.80	6048.44	1495.12
11/17/2006	0.8100	0.4700	0.7800	0.1500	0.0055	0.0032	0.0053	0.0010	5504.76	3194.12	5300.88	1019.40
12/27/2006	0.7400	0.4700	0.7500	0.1100	0.0050	0.0032	0.0051	0.0007	5029.04	3194.12	5097.00	747.56
3/30/2007	0.5100	0.1800	0.5700	0.0310	0.0035	0.0012	0.0039	0.0002	3465.96	1223.28	3873.72	210.68
6/15/2007	0.0050	0.3100	0.2100	0.4600	0.0000	0.0021	0.0014	0.0031	33.98	2106.76	1427.16	3126.16
10/16/2007	0.3900	0.2400	0.2800	0.0670	0.0027	0.0016	0.0019	0.0005	2650.44	1631.04	1902.88	455.33
12/14/2007	0.5800	0.3400	0.5200	0.1400	0.0039	0.0023	0.0035	0.0010	3941.68	2310.64	3533.92	951.44
3/27/2008	0.5500	NS	0.5600	0.0740	0.0037	NS	0.0038	0.0005	3737.80	NS	3805.76	502.90
4/1/2008	NS	0.3600	NS	NS	NS	0.0024	NS	NS	2446.56	NS	NS	NS
6/2/2008	0.7200	0.5600	0.4900	0.1000	0.0049	0.0038	0.0033	0.0007	4893.12	3805.76	3330.04	679.60
9/12/2008	0.4800	0.4700	0.5300	0.1300	0.0033	0.0032	0.0036	0.0009	3262.08	3194.12	3601.88	883.48
11/26/2008	0.4600	NS	0.3600	0.1100	0.0031	NS	0.0024	0.0007	3126.16	NS	2446.56	747.56
3/24/2009	0.4500	NS	0.5500	0.0050	0.0031	NS	0.0037	0.00003	3058.20	NS	3737.80	33.98
6/15/2009	0.4300	NS	0.4200	0.0200	0.0029	NS	0.0029	0.0001	2922.28	NS	2854.32	135.92
8/21/2009	0.3600	0.1600	0.4700	0.0140	0.0024	0.0011	0.0032	0.0001	2446.56	1087.36	3194.12	95.14
11/5/2009	0.3300	0.1400	0.4100	0.0050	0.0022	0.0010	0.0028	0.00003	2242.68	951.44	2786.36	33.98
2/5/2010	0.1600	0.0370	0.1400	0.0120	0.0011	0.0003	0.0010	0.0001	1087.36	251.45	951.44	81.55
4/23/2010	0.1300	NS	NS	0.0170	0.0009	NS	NS	0.0001	883.48	NS	NS	115.53
5/6/2010	NS	0.1500	0.2500	NS	NS	0.0010	0.0017	NS	NS	1019.40	1699.00	NS
7/23/2010	0.1500	0.1900	0.1200	0.0050	0.0010	0.0013	0.0008	0.00003	1019.40	1291.24	815.52	33.98
10/13/2010	NS	NS	NS	0.0050	NS	NS	NS	0.00003	NS	NS	NS	33.98
10/15/2010	0.0940	0.0650	0.0050	NS	0.0006	0.0004	0.0000	NS	638.82	441.74	33.98	NS
1/21/2011	0.1400	0.0270	NS	0.0050	0.0010	0.0002	NS	0.00003	951.44	183.49	NS	33.98
4/8/2011	NS	NS	0.2100	NS	NS	NS	0.0014	NS	NS	NS	1427.16	NS
5/11/2011	0.2200	0.2700	0.2100	0.0230	0.0015	0.0018	0.0014	0.0002	1495.12	1834.92	1427.16	156.31
7/29/2011	0.0660	0.1700	0.1100	0.0050	0.0004	0.0012	0.0007	0.00003	448.54	1155.32	747.56	33.98
10/25/2011	0.1100	0.1200	0.0530	0.0050	0.0007	0.0008	0.0004	0.00003	747.56	815.52	360.19	33.98
1/20/2012	0.1000	0.0810	0.0660	0.0081	0.0007	0.0006	0.0004	0.00006	679.60	550.48	448.54	55.05
6/15/2012	0.0710	0.1200	0.0480	0.0046	0.0005	0.0008	0.0003	0.00003	482.52	815.52	326.21	31.26
9/25/2012	0.1000	0.1800	0.0880	0.0010	0.0007	0.0012	0.0006	0.00001	679.60	1223.28	598.05	6.80
12/31/2012	0.2400	0.1900	0.1400	0.0019	0.0016	0.0013	0.0010	0.00001	1631.04	1291.24	951.44	12.91

NS = Not sampled

*Italic* = Reported concentrations are estimated values (J-flagged values) or below laboratory detection limits. Concentrations of PCE, TCE, and cis-1,2-DCE are assumed to be one-half the laboratory practical quantitation limit (PQL). Concentrations of vinyl chloride are assumed to be 0.015 ppmv, representing the mean detected concentration below laboratory reporting limits.

**APPENDIX B**  
**Air Mitigation System - Historical Air Analytical Results**  
**Michigan Plaza**  
**Indianapolis, Indiana**  
**MUNDELL Project No.: M01046**

Sample Date	Trichloroethylene (TCE)											
	B-1	B-2	B-3	B-4	B-1	B-2	B-3	B-4	B-1	B-2	B-3	B-4
	(ppmv)				(ppm)				(\mu g/m³)			
9/21/2006	0.0240	0.0120	0.0050	0.0050	0.0001	0.0001	0.00003	0.00003	129.24	64.62	26.93	26.93
10/6/2006	0.0120	0.0050	0.0050	0.0050	0.0001	0.00003	0.00003	0.00003	64.62	26.93	26.93	26.93
10/13/2006	0.0050	0.0050	0.0050	0.0050	0.00003	0.00003	0.00003	0.00003	26.93	26.93	26.93	26.93
10/20/2006	0.0050	0.0050	0.0050	0.0050	0.00003	0.00003	0.00003	0.00003	26.93	26.93	26.93	26.93
11/17/2006	0.0050	0.0050	0.0050	0.0050	0.00003	0.00003	0.00003	0.00003	26.93	26.93	26.93	26.93
12/27/2006	0.0050	0.0050	0.0050	0.0050	0.00003	0.00003	0.00003	0.00003	26.93	26.93	26.93	26.93
3/30/2007	0.0050	0.0050	0.0050	0.0050	0.00003	0.00003	0.00003	0.00003	26.93	26.93	26.93	26.93
6/15/2007	0.4600	0.0050	0.0050	0.0050	0.0025	0.00003	0.00003	0.00003	2,477.10	26.93	26.93	26.93
10/16/2007	0.0050	0.0050	0.0050	0.0050	0.00003	0.00003	0.00003	0.00003	26.93	26.93	26.93	26.93
12/14/2007	0.0050	0.0050	0.0050	0.0050	0.00003	0.00003	0.00003	0.00003	26.93	26.93	26.93	26.93
3/27/2008	0.0050	NS	0.0050	0.0050	0.00003	NS	0.00003	0.00003	26.93	NS	26.93	26.93
4/1/2008	NS	0.0050	NS	NS	NS	0.0000	NS	NS	NS	26.93	NS	NS
6/2/2008	0.0050	0.0050	0.0050	0.0050	0.00003	0.00003	0.00003	0.00003	26.93	26.93	26.93	26.93
9/12/2008	0.0050	0.0050	0.0050	0.0050	0.00003	0.00003	0.00003	0.00003	26.93	26.93	26.93	26.93
11/26/2008	0.0050	NS	0.0050	0.0050	0.00003	NS	0.00003	0.00003	26.93	NS	26.93	26.93
3/24/2009	0.0050	NS	0.0050	0.0050	0.00003	NS	0.00003	0.00003	26.93	NS	26.93	26.93
6/15/2009	0.0050	NS	0.0050	0.0050	0.00003	NS	0.00003	0.00003	26.93	NS	26.93	26.93
8/21/2009	0.0050	0.0050	0.0050	0.0050	0.00003	0.00003	0.00003	0.00003	26.93	26.93	26.93	26.93
11/5/2009	0.0050	0.0050	0.0050	0.0050	0.00003	0.00003	0.00003	0.00003	26.93	26.93	26.93	26.93
2/5/2010	0.0050	0.0050	0.0050	0.0050	0.00003	0.00003	0.00003	0.00003	26.93	26.93	26.93	26.93
4/23/2010	0.0050	NS	NS	0.0050	0.00003	NS	NS	0.00003	26.93	NS	NS	26.93
5/6/2010	NS	0.0050	0.0050	NS	NS	0.00003	0.00003	NS	NS	26.93	26.93	NS
7/23/2010	0.0050	0.0050	0.0050	0.0050	0.00003	0.00003	0.00003	0.00003	26.93	26.93	26.93	26.93
10/13/2010	NS	NS	NS	0.0050	NS	NS	NS	0.00003	NS	NS	NS	26.93
10/15/2010	0.0050	0.0050	0.0050	NS	0.00003	0.00003	0.00003	NS	26.93	26.93	26.93	NS
1/21/2011	0.0050	0.0050	NS	0.0050	0.00003	0.00003	NS	0.00003	26.93	26.93	NS	26.93
4/8/2011	NS	NS	0.0050	NS	NS	NS	0.00003	NS	NS	NS	26.93	NS
5/11/2011	0.0050	0.0050	0.0050	0.0050	0.00003	0.00003	0.00003	0.00003	26.93	26.93	26.93	26.93
7/29/2011	0.0050	0.0050	0.0050	0.0050	0.00003	0.00003	0.00003	0.00003	26.93	26.93	26.93	26.93
10/25/2011	0.0050	0.0050	0.0050	0.0050	0.00003	0.00003	0.00003	0.00003	26.93	26.93	26.93	26.93
1/20/2012	0.0050	0.0050	0.0011	0.0050	0.00003	0.00003	0.00001	0.00003	26.93	26.93	5.92	26.93
6/15/2012	0.0013	0.0011	0.0050	0.0050	0.00001	0.00001	0.00003	0.00003	7.00	5.92	26.93	26.93
9/25/2012	0.0013	0.0017	0.0018	0.0050	0.00001	0.00001	0.00001	0.00003	7.00	9.15	9.69	26.93
12/31/2012	0.0021	0.0019	0.0028	0.0050	0.00001	0.00001	0.00002	0.00003	11.31	10.23	15.08	26.93

NS = Not sampled

*Italic* = Reported concentrations are estimated values (J-flagged values) or below laboratory detection limits. Concentrations of PCE, TCE, and cis-1,2-DCE are assumed to be one-half the laboratory practical quantitation limit (PQL). Concentrations of vinyl chloride are assumed to be 0.015 ppmv, representing the mean detected concentration below laboratory reporting limits.

**APPENDIX B**  
**Air Mitigation System - Historical Air Analytical Results**  
**Michigan Plaza**  
**Indianapolis, Indiana**  
**MUNDELL Project No.: M01046**

Sample Date	Vinyl Chloride											
	B-1	B-2	B-3	B-4	B-1	B-2	B-3	B-4	B-1	B-2	B-3	B-4
	(ppmv)				(ppm)				(\mu g/m³)			
9/21/2006	0.0150	0.0150	0.0150	0.0150	0.00004	0.00004	0.00004	0.00004	38.42	38.42	38.42	38.42
10/6/2006	0.0150	0.0150	0.0150	0.0150	0.00004	0.00004	0.00004	0.00004	38.42	38.42	38.42	38.42
10/13/2006	0.0150	0.0150	0.0150	0.0150	0.00004	0.00004	0.00004	0.00004	38.42	38.42	38.42	38.42
10/20/2006	0.0150	0.0150	0.0150	0.0150	0.00004	0.00004	0.00004	0.00004	38.42	38.42	38.42	38.42
11/17/2006	0.0150	0.0150	0.0150	0.0150	0.00004	0.00004	0.00004	0.00004	38.42	38.42	38.42	38.42
12/27/2006	0.0150	0.0150	0.0150	0.0150	0.00004	0.00004	0.00004	0.00004	38.42	38.42	38.42	38.42
3/30/2007	0.0150	0.0150	0.0150	0.0150	0.00004	0.00004	0.00004	0.00004	38.42	38.42	38.42	38.42
6/15/2007	0.0150	0.0150	0.0150	0.0150	0.00004	0.00004	0.00004	0.00004	38.42	38.42	38.42	38.42
10/16/2007	0.0150	0.0150	0.0150	0.0150	0.00004	0.00004	0.00004	0.00004	38.42	38.42	38.42	38.42
12/14/2007	0.0150	0.0150	0.0150	0.0150	0.00004	0.00004	0.00004	0.00004	38.42	38.42	38.42	38.42
3/27/2008	0.0150	NS	0.0150	0.0150	0.00004	NS	0.00004	0.00004	38.42	NS	38.42	38.42
4/1/2008	NS	0.0150	NS	NS	NS	0.00004	NS	NS	NS	38.42	NS	NS
6/2/2008	0.0150	0.0150	0.0150	0.0150	0.00004	0.00004	0.00004	0.00004	38.42	38.42	38.42	38.42
9/12/2008	0.0150	0.0150	0.0150	0.0150	0.00004	0.00004	0.00004	0.00004	38.42	38.42	38.42	38.42
11/26/2008	0.0150	NS	0.0150	0.0150	0.00004	NS	0.00004	0.00004	38.42	NS	38.42	38.42
3/24/2009	0.0150	NS	0.0150	0.0150	0.00004	NS	0.00004	0.00004	38.42	NS	38.42	38.42
6/15/2009	0.0150	NS	0.0150	0.0150	0.00004	NS	0.00004	0.00004	38.42	NS	38.42	38.42
8/21/2009	0.0150	0.0150	0.0150	0.0150	0.00004	0.00004	0.00004	0.00004	38.42	38.42	38.42	38.42
11/5/2009	0.0150	0.0150	0.0150	0.0150	0.00004	0.00004	0.00004	0.00004	38.42	38.42	38.42	38.42
2/5/2010	0.0150	0.0150	0.0150	0.0150	0.00004	0.00004	0.00004	0.00004	38.42	38.42	38.42	38.42
4/23/2010	0.0150	NS	NS	0.0150	0.00004	NS	NS	0.00004	38.42	NS	NS	38.42
5/6/2010	NS	0.0150	0.0150	NS	NS	0.00004	0.00004	NS	NS	38.42	38.42	NS
7/23/2010	0.0150	0.0150	0.0150	0.0150	0.00004	0.00004	0.00004	0.00004	38.42	38.42	38.42	38.42
10/13/2010	NS	NS	NS	0.0150	NS	NS	NS	0.00004	NS	NS	NS	38.42
10/15/2010	0.0150	0.0150	0.0150	NS	0.00004	0.00004	0.00004	NS	38.42	38.42	38.42	NS
1/21/2011	0.0150	0.0150	NS	0.0150	0.00004	0.00004	NS	0.00004	38.42	38.42	NS	38.42
4/8/2011	NS	NS	0.0150	NS	NS	NS	0.00004	NS	NS	NS	38.42	NS
5/11/2011	0.0150	0.0150	0.0150	0.0150	0.00004	0.00004	0.00004	0.00004	38.42	38.42	38.42	38.42
7/29/2011	0.0150	0.0150	0.0150	0.0150	0.00004	0.00004	0.00004	0.00004	38.42	38.42	38.42	38.42
10/25/2011	0.0150	0.0150	0.0150	0.0150	0.00004	0.00004	0.00004	0.00004	38.42	38.42	38.42	38.42
1/20/2012	0.2000	0.1100	0.0150	0.0150	0.00051	0.00028	0.00004	0.00004	512.20	281.71	38.42	38.42
6/15/2012	0.0150	0.0150	0.0150	0.0150	0.00004	0.00004	0.00004	0.00004	38.42	38.42	38.42	38.42
9/25/2012	0.0150	0.0150	0.1400	0.1000	0.00004	0.00004	0.00036	0.00026	38.42	38.42	358.54	256.10
12/31/2012	0.3300	1.6000	0.2300	0.5000	0.00085	0.00410	0.00059	0.00128	845.13	4,097.60	589.03	1,280.50

NS = Not sampled

*Italic* = Reported concentrations are estimated values (J-flagged values) or below laboratory detection limits. Concentrations of PCE, TCE, and cis-1,2-DCE are assumed to be one-half the laboratory practical quantitation limit (PQL). Concentrations of vinyl chloride are assumed to be 0.015 ppmv, representing the mean detected concentration below laboratory reporting limits.

**APPENDIX B**  
**Air Mitigation System - Historical Air Analytical Results**  
**Michigan Plaza**  
**Indianapolis, Indiana**  
**MUNDELL Project No.: M01046**

Sample Date	cis-1,2-Dichloroethylene											
	B-1	B-2	B-3	B-4	B-1	B-2	B-3	B-4	B-1	B-2	B-3	B-4
	(ppmv)				(ppm)				(\mu g/m³)			
9/21/2006	0.1400	0.0100	0.0100	0.0100	0.0006	0.00004	0.00004	0.00004	556.22	39.73	39.73	39.73
10/6/2006	0.0300	0.0100	0.0100	0.0100	0.0001	0.00004	0.00004	0.00004	119.19	39.73	39.73	39.73
10/13/2006	0.0100	0.0100	0.0100	0.0100	0.00004	0.00004	0.00004	0.00004	39.73	39.73	39.73	39.73
10/20/2006	0.0100	0.0100	0.0100	0.0100	0.00004	0.00004	0.00004	0.00004	39.73	39.73	39.73	39.73
11/17/2006	0.0100	0.0100	0.0100	0.0100	0.00004	0.00004	0.00004	0.00004	39.73	39.73	39.73	39.73
12/27/2006	0.0240	0.0100	0.0100	0.0100	0.0001	0.00004	0.00004	0.00004	95.35	39.73	39.73	39.73
3/30/2007	0.0100	0.0100	0.0100	0.0100	0.00004	0.00004	0.00004	0.00004	39.73	39.73	39.73	39.73
6/15/2007	0.2100	0.0100	0.0100	0.0100	0.0008	0.00004	0.00004	0.00004	834.33	39.73	39.73	39.73
10/16/2007	0.0100	0.0100	0.0100	0.0100	0.00004	0.00004	0.00004	0.00004	39.73	39.73	39.73	39.73
12/14/2007	0.0100	0.0100	0.0100	0.0100	0.00004	0.00004	0.00004	0.00004	39.73	39.73	39.73	39.73
3/27/2008	0.0340	NS	0.0100	0.0100	0.0001	NS	0.00004	0.00004	135.08	NS	39.73	39.73
4/1/2008	NS	0.0100	NS	NS	NS	0.00004	NS	NS	NS	39.73	NS	NS
6/2/2008	0.0100	0.0100	0.0100	0.0100	0.00004	0.00004	0.00004	0.00004	39.73	39.73	39.73	39.73
9/12/2008	0.0100	0.0100	0.0100	0.0100	0.00004	0.00004	0.00004	0.00004	39.73	39.73	39.73	39.73
11/26/2008	0.0100	NS	0.0100	0.0100	0.00004	NS	0.00004	0.00004	39.73	NS	39.73	39.73
3/24/2009	0.0100	NS	0.0100	0.0100	0.00004	NS	0.00004	0.00004	39.73	NS	39.73	39.73
6/15/2009	0.0100	NS	0.0100	0.0100	0.00004	NS	0.00004	0.00004	39.73	NS	39.73	39.73
8/21/2009	0.0100	0.0100	0.0100	0.0100	0.00004	0.00004	0.00004	0.00004	39.73	39.73	39.73	39.73
11/5/2009	0.0100	0.0100	0.0100	0.0100	0.00004	0.00004	0.00004	0.00004	39.73	39.73	39.73	39.73
2/5/2010	0.0100	0.0100	0.0100	0.0100	0.00004	0.00004	0.00004	0.00004	39.73	39.73	39.73	39.73
4/23/2010	0.0100	NS	NS	0.0100	0.00004	NS	NS	0.00004	39.73	NS	NS	39.73
5/6/2010	NS	0.0100	0.0100	NS	NS	0.00004	0.00004	NS	NS	39.73	39.73	NS
7/23/2010	0.0100	0.0100	0.0100	0.0100	0.00004	0.00004	0.00004	0.00004	39.73	39.73	39.73	39.73
10/13/2010	NS	NS	NS	0.0100	NS	NS	NS	0.00004	NS	NS	NS	39.73
10/15/2010	0.0100	0.0100	0.0100	NS	0.00004	0.00004	0.00004	NS	39.73	39.73	39.73	NS
1/21/2011	0.0100	0.0100	NS	0.0100	0.00004	0.00004	NS	0.00004	39.73	39.73	NS	39.73
4/8/2011	NS	NS	0.0500	NS	NS	NS	0.0002	NS	NS	NS	198.65	NS
5/11/2011	0.0100	0.0100	0.0100	0.0100	0.00004	0.00004	0.00004	0.00004	39.73	39.73	39.73	39.73
7/29/2011	0.0100	0.0100	0.0100	0.0100	0.00004	0.00004	0.00004	0.00004	39.73	39.73	39.73	39.73
10/25/2011	0.0100	0.0100	0.0100	0.0100	0.00004	0.00004	0.00004	0.00004	39.73	39.73	39.73	39.73
1/20/2012	0.0100	0.0100	0.0100	0.0100	0.00004	0.00004	0.00004	0.00004	39.73	39.73	39.73	39.73
6/15/2012	0.0100	0.0100	0.0100	0.0100	0.00004	0.00004	0.00004	0.00004	39.73	39.73	39.73	39.73
9/25/2012	0.0100	0.0100	0.0100	0.0100	0.00004	0.00004	0.00004	0.00004	39.73	39.73	39.73	39.73
12/31/2012	0.0100	0.0100	0.0100	0.0100	0.00004	0.00004	0.00004	0.00004	39.73	39.73	39.73	39.73

NS = Not sampled

*Italic* = Reported concentrations are estimated values (J-flagged values) or below laboratory detection limits. Concentrations of PCE, TCE, and cis-1,2-DCE are assumed to be one-half the laboratory practical quantitation limit (PQL). Concentrations of vinyl chloride are assumed to be 0.015 ppmv, representing the mean detected concentration below laboratory reporting limits.

**APPENDIX B**  
**Air Mitigation System - Historical Air Analytical Results**  
**Michigan Meadows Apartments**  
**Indianapolis, Indiana**  
**MUNDELL Project No.: M01046**

Sample Date	Perchloroethylene (PCE)								
	B-5	B-6	B-7	B-5	B-6	B-7	B-5	B-6	B-7
	(ppmv)			(ppm)			( $\mu\text{g}/\text{m}^3$ )		
3/27/2008	0.1300	1.2000	NS	0.0009	0.0082	NS	883.48	8155.20	NS
3/28/2008	0.0730	0.4900	NS	0.0005	0.0033	NS	496.11	3330.04	NS
4/7/2008	NS	NS	0.0760	NS	NS	0.0005	NS	NS	516.50
4/8/2008	NS	NS	0.0470	NS	NS	0.0003	NS	NS	319.41
4/24/2008	0.0540	0.1100	0.0220	0.0004	0.0007	0.0001	366.98	747.56	149.51
5/1/2008	0.0580	0.2100	0.0390	0.0004	0.0014	0.0003	394.17	1427.16	265.04
6/2/2008	0.0590	0.2200	0.0530	0.0004	0.0015	0.0004	400.96	1495.12	360.19
7/10/2008	0.0650	NS	0.0540	0.0004	NS	0.0004	441.74	NS	366.98
8/20/2008	NS	0.2700	NS	NS	0.0018	NS	NS	1834.92	NS
9/12/2008	0.0690	0.1800	0.0540	0.0005	0.0012	0.0004	468.92	1223.28	366.98
11/26/2008	0.0720	0.1100	0.0560	0.0005	0.0007	0.0004	489.31	747.56	380.58
3/24/2009	0.2100	0.1300	0.0590	0.0014	0.0009	0.0004	1427.16	883.48	400.96
6/15/2009	0.0580	0.0840	0.0050	0.0004	0.0006	0.00003	394.17	570.86	33.98
8/21/2009	0.0630	0.0710	0.0050	0.0004	0.0005	0.00003	428.15	482.52	33.98
11/5/2009	0.1300	0.1100	0.0050	0.0009	0.0007	0.00003	883.48	747.56	33.98
2/5/2010	0.0220	0.0800	0.0050	0.0001	0.0005	0.00003	149.51	543.68	33.98
2/6/2010	0.0220	0.0800	0.0050	0.0001	0.0005	0.00003	149.51	543.68	33.98
4/23/2010	0.0120	NS	0.0050	0.0001	NS	0.00003	81.55	NS	33.98
5/12/2010	NS	0.1300	NS	NS	0.0009	NS	NS	883.48	NS
7/23/2010	0.0270	0.1000	0.0050	0.0002	0.0007	0.00003	183.49	679.60	33.98
10/15/2010	0.0150	0.0190	0.0050	0.0001	0.0001	0.00003	101.94	129.12	33.98
1/21/2011	0.0330	0.0490	0.0050	0.0002	0.0003	0.00003	224.27	333.00	33.98
5/11/2011	0.0580	0.0610	0.0050	0.0004	0.0004	0.00003	394.17	414.56	33.98
7/29/2011	0.0220	0.0210	0.0050	0.0001	0.0001	0.00003	149.51	142.72	33.98
10/25/2011	0.0300	0.0250	0.0050	0.0002	0.0002	0.00003	203.88	169.90	33.98
1/20/2012	0.0220	0.0180	0.0029	0.0001	0.0001	0.00002	149.51	122.33	19.71
6/15/2012	0.0140	0.0110	0.0025	0.0001	0.0001	0.00002	95.14	74.76	16.99
9/25/2012	0.0180	0.0310	0.0050	0.0001	0.0002	0.00003	122.33	210.68	33.98
12/31/2012	0.0170	0.0240	0.0050	0.0001	0.0002	0.00003	115.53	163.10	33.98

NS = Not sampled

*Italic* = Reported concentrations are estimated values (J-flagged values) or below laboratory detection limits. Concentrations of PCE, TCE, and cis-1,2-DCE are assumed to be one-half the laboratory practical quantitation limit (PQL). Concentrations of vinyl chloride are assumed to be 0.015 ppmv, representing the mean detected concentration below laboratory reporting limits.

**APPENDIX B**  
**Air Mitigation System - Historical Air Analytical Results**  
**Michigan Meadows Apartments**  
**Indianapolis, Indiana**  
**MUNDELL Project No.: M01046**

Sample Date	Trichloroethylene (TCE)								
	B-5	B-6	B-7	B-5	B-6	B-7	B-5	B-6	B-7
	(ppmv)			(ppm)			( $\mu\text{g}/\text{m}^3$ )		
3/27/2008	0.0050	0.0050	NS	0.00003	0.00003	NS	26.93	26.93	NS
3/28/2008	0.0050	0.0050	NS	0.00003	0.00003	NS	26.93	26.93	NS
4/7/2008	NS	NS	0.0050	NS	NS	0.00003	NS	NS	26.93
4/8/2008	NS	NS	0.0050	NS	NS	0.00003	NS	NS	26.93
4/24/2008	0.0050	0.0050	0.0050	0.00003	0.00003	0.00003	26.93	26.93	26.93
5/1/2008	0.0050	0.0050	0.0050	0.00003	0.00003	0.00003	26.93	26.93	26.93
6/2/2008	0.0050	0.0050	0.0050	0.00003	0.00003	0.00003	26.93	26.93	26.93
7/10/2008	0.0050	NS	0.0050	0.00003	NS	0.00003	26.93	NS	26.93
8/20/2008	NS	0.0050	NS	NS	0.00003	NS	NS	26.93	NS
9/12/2008	0.0050	0.0050	0.0050	0.00003	0.00003	0.00003	26.93	26.93	26.93
11/26/2008	0.0050	0.0050	0.0050	0.00003	0.00003	0.00003	26.93	26.93	26.93
3/24/2009	0.0050	0.0050	0.0050	0.00003	0.00003	0.00003	26.93	26.93	26.93
6/15/2009	0.0050	0.0050	0.0050	0.00003	0.00003	0.00003	26.93	26.93	26.93
8/21/2009	0.0050	0.0050	0.0050	0.00003	0.00003	0.00003	26.93	26.93	26.93
11/5/2009	0.0050	0.0050	0.0050	0.00003	0.00003	0.00003	26.93	26.93	26.93
2/5/2010	0.0050	0.0050	0.0050	0.00003	0.00003	0.00003	26.93	26.93	26.93
2/6/2010	0.0050	0.0050	0.0050	0.00003	0.00003	0.00003	26.93	26.93	26.93
4/23/2010	0.0050	NS	0.0050	0.00003	NS	0.00003	26.93	NS	26.93
5/12/2010	NS	0.0050	NS	NS	0.00003	NS	NS	26.93	NS
7/23/2010	0.0050	0.0050	0.0050	0.00003	0.00003	0.00003	26.93	26.93	26.93
10/15/2010	0.0050	0.0050	0.0050	0.00003	0.00003	0.00003	26.93	26.93	26.93
1/21/2011	0.0050	0.0050	0.0050	0.00003	0.00003	0.00003	26.93	26.93	26.93
5/11/2011	0.0050	0.0050	0.0050	0.00003	0.00003	0.00003	26.93	26.93	26.93
7/29/2011	0.0050	0.0050	0.0050	0.00003	0.00003	0.00003	26.93	26.93	26.93
10/25/2011	0.0050	0.0050	0.0050	0.00003	0.00003	0.00003	26.93	26.93	26.93
1/20/2012	0.0012	0.0050	0.0050	0.00001	0.00003	0.00003	6.46	26.93	26.93
6/15/2012	0.0015	0.0050	0.0050	0.00001	0.00003	0.00003	8.08	26.93	26.93
9/25/2012	0.0012	0.0050	0.0050	0.00001	0.00003	0.00003	6.46	26.93	26.93
12/31/2012	0.0011	0.0050	0.0050	0.00001	0.00003	0.00003	5.92	26.93	26.93

NS = Not sampled

*Italic* = Reported concentrations are estimated values (J-flagged values) or below laboratory detection limits. Concentrations of PCE, TCE, and cis-1,2-DCE are assumed to be one-half the laboratory practical quantitation limit (PQL). Concentrations of vinyl chloride are assumed to be 0.015 ppmv, representing the mean detected concentration below laboratory reporting limits.

**APPENDIX B**  
**Air Mitigation System - Historical Air Analytical Results**  
**Maple Creek Village Apartments**  
**Indianapolis, Indiana**  
**MUNDELL Project No.: M01046**

Sample Date	Vinyl Chloride								
	B-5	B-6	B-7	B-5	B-6	B-7	B-5	B-6	B-7
	(ppmv)			(ppm)			( $\mu\text{g}/\text{m}^3$ )		
3/27/2008	0.0150	0.0150	NS	0.00004	0.00004	NS	38.42	38.42	NS
3/28/2008	0.0150	0.0150	NS	0.00004	0.00004	NS	38.42	38.42	NS
4/7/2008	NS	NS	0.0150	NS	NS	0.00004	NS	NS	38.42
4/8/2008	NS	NS	0.0150	NS	NS	0.00004	NS	NS	38.42
4/24/2008	0.0150	0.0150	0.0150	0.00004	0.00004	0.00004	38.42	38.42	38.42
5/1/2008	0.0150	0.0150	0.0150	0.00004	0.00004	0.00004	38.42	38.42	38.42
6/2/2008	0.0150	0.0150	0.0150	0.00004	0.00004	0.00004	38.42	38.42	38.42
7/10/2008	0.0150	NS	0.0150	0.00004	NS	0.00004	38.42	NS	38.42
8/20/2008	NS	0.0150	NS	NS	0.00004	NS	NS	38.42	NS
9/12/2008	0.0150	0.0150	0.0150	0.00004	0.00004	0.00004	38.42	38.42	38.42
11/26/2008	0.0150	0.0150	0.0150	0.00004	0.00004	0.00004	38.42	38.42	38.42
3/24/2009	0.0150	0.0150	0.0150	0.00004	0.00004	0.00004	38.42	38.42	38.42
6/15/2009	0.0150	0.0150	0.0150	0.00004	0.00004	0.00004	38.42	38.42	38.42
8/21/2009	0.0150	0.0150	0.0150	0.00004	0.00004	0.00004	38.42	38.42	38.42
11/5/2009	0.0150	0.0150	0.0150	0.00004	0.00004	0.00004	38.42	38.42	38.42
2/5/2010	0.0150	0.0150	0.0150	0.00004	0.00004	0.00004	38.42	38.42	38.42
2/6/2010	0.0150	0.0150	0.0150	0.00004	0.00004	0.00004	38.42	38.42	38.42
4/23/2010	0.0150	NS	0.0150	0.00004	NS	0.00004	38.42	NS	38.42
5/12/2010	NS	0.0150	NS	NS	0.00004	NS	NS	38.42	NS
7/23/2010	0.0150	0.0150	0.0150	0.00004	0.00004	0.00004	38.42	38.42	38.42
10/15/2010	0.0150	0.0150	0.0150	0.00004	0.00004	0.00004	38.42	38.42	38.42
1/21/2011	0.0150	0.0150	0.0150	0.00004	0.00004	0.00004	38.42	38.42	38.42
5/11/2011	0.0150	0.0150	0.0150	0.00004	0.00004	0.00004	38.42	38.42	38.42
7/29/2011	0.0150	0.0150	0.0150	0.00004	0.00004	0.00004	38.42	38.42	38.42
10/25/2011	0.0150	0.0150	0.0150	0.00004	0.00004	0.00004	38.42	38.42	38.42
1/20/2012	0.0150	0.0150	0.0150	0.00004	0.00004	0.00004	38.42	38.42	38.42
6/15/2012	0.3300	0.1400	0.1200	0.00085	0.00036	0.00031	845.13	358.54	307.32
9/25/2012	0.1500	0.1100	0.0150	0.00038	0.00028	0.00004	384.15	281.71	38.42
12/31/2012	0.2000	0.1400	0.1500	0.00051	0.00036	0.00038	512.20	358.54	384.15

NS = Not sampled

*Italic* = Reported concentrations are estimated values (J-flagged values) or below laboratory detection limits. Concentrations of PCE, TCE, and cis-1,2-DCE are assumed to be one-half the laboratory practical quantitation limit (PQL). Concentrations of vinyl chloride are assumed to be 0.015 ppmv, representing the mean detected concentration below laboratory reporting limits.

**APPENDIX B**  
**Air Mitigation System - Historical Air Analytical Results**  
**Maple Creek Village Apartments**  
**Indianapolis, Indiana**  
**MUNDELL Project No.: M01046**

Sample Date	<b>cis-1,2-Dichloroethylene</b>								
	B-5	B-6	B-7	B-5	B-6	B-7	B-5	B-6	B-7
	(ppmv)			(ppm)			( $\mu\text{g}/\text{m}^3$ )		
3/27/2008	0.0100	0.0100	NS	0.00004	0.00004	NS	39.73	39.73	NS
3/28/2008	0.0100	0.0100	NS	0.00004	0.00004	NS	39.73	39.73	NS
4/7/2008	NS	NS	0.0100	NS	NS	0.00004	NS	NS	39.73
4/8/2008	NS	NS	0.0100	NS	NS	0.00004	NS	NS	39.73
4/24/2008	0.0100	0.0100	0.0100	0.00004	0.00004	0.00004	39.73	39.73	39.73
5/1/2008	0.0100	0.0100	0.0100	0.00004	0.00004	0.00004	39.73	39.73	39.73
6/2/2008	0.0100	0.0100	0.0100	0.00004	0.00004	0.00004	39.73	39.73	39.73
7/10/2008	0.0100	NS	0.0100	0.00004	NS	0.00004	39.73	NS	39.73
8/20/2008	NS	0.0100	NS	NS	0.00004	NS	NS	39.73	NS
9/12/2008	0.0100	0.0100	0.0100	0.00004	0.00004	0.00004	39.73	39.73	39.73
11/26/2008	0.0100	0.0100	0.0100	0.00004	0.00004	0.00004	39.73	39.73	39.73
3/24/2009	0.0100	0.0100	0.0100	0.00004	0.00004	0.00004	39.73	39.73	39.73
6/15/2009	0.0100	0.0100	0.0100	0.00004	0.00004	0.00004	39.73	39.73	39.73
8/21/2009	0.0100	0.0100	0.0100	0.00004	0.00004	0.00004	39.73	39.73	39.73
11/5/2009	0.0100	0.0100	0.0100	0.00004	0.00004	0.00004	39.73	39.73	39.73
2/5/2010	0.0100	0.0100	0.0100	0.00004	0.00004	0.00004	39.73	39.73	39.73
2/6/2010	0.0100	0.0100	0.0100	0.00004	0.00004	0.00004	39.73	39.73	39.73
4/23/2010	0.0100	NS	0.0100	0.00004	NS	0.00004	39.73	NS	39.73
5/12/2010	NS	0.0100	NS	NS	0.00004	NS	NS	39.73	NS
7/23/2010	0.0100	0.0100	0.0100	0.00004	0.00004	0.00004	39.73	39.73	39.73
10/15/2010	0.0100	0.0100	0.0100	0.00004	0.00004	0.00004	39.73	39.73	39.73
1/21/2011	0.0100	0.0100	0.0100	0.00004	0.00004	0.00004	39.73	39.73	39.73
5/11/2011	0.0100	0.0100	0.0100	0.00004	0.00004	0.00004	39.73	39.73	39.73
7/29/2011	0.0100	0.0100	0.0100	0.00004	0.00004	0.00004	39.73	39.73	39.73
10/25/2011	0.0100	0.0100	0.0100	0.00004	0.00004	0.00004	39.73	39.73	39.73
1/20/2012	0.0100	0.0100	0.0100	0.00004	0.00004	0.00004	39.73	39.73	39.73
6/15/2012	0.0100	0.0100	0.0340	0.00004	0.00004	0.00014	39.73	39.73	135.08
9/25/2012	0.0100	0.0100	0.0100	0.00004	0.00004	0.00004	39.73	39.73	39.73
12/31/2012	0.0100	0.0100	0.0100	0.00004	0.00004	0.00004	39.73	39.73	39.73

NS = Not sampled

*Italic* = Reported concentrations are estimated values (J-flagged values) or below laboratory detection limits. Concentrations of PCE, TCE, and cis-1,2-DCE are assumed to be one-half the laboratory practical quantitation limit (PQL). Concentrations of vinyl chloride are assumed to be 0.015 ppmv, representing the mean detected concentration below laboratory reporting limits.

**Lab Data for Air Mitigation System B-1**  
**Fourth Quarter 2012**  
**1/15/2013**  
**Michigan Plaza**  
**3801-3823 West Michigan Street**  
**Indianapolis, Indiana**  
**MUNDELL Project No.: M01046**

B-1 (Lab Data)													B-1 (PID Readings)									
Sample Date	Hours per Cycle	Average Flow Rate (CFM)	Air Vol. Removed per Cycle (CF)	µg/m³ PCE	Lbs. PCE removed	µg/m³ TCE	Lbs. TCE removed	µg/m³ VC	Lbs. VC removed	µg/m³ cis-1,2-DCE	Lbs. cis-1,2-DCE removed	Lbs. Total Pollutants Removed (ug/m³)	Cumulative PCE lbs Removed	Cumulative Total Pollutant lbs Removed	Sample Date	Hours Per Cycle	Average Flow Rate (CFM)	Air Vol. Removed per Cycle (CF)	PID Reading (ppm VOCs)	µg/m³ VOCs	Lbs. VOCs Removed	Cum Total lbs Removed (Est from PID)
9/21/2006	0.5	73	2,190	4,281	0.00	129	0.00	38	0.00	556	0.00	0.00	0.00	0.00	11/17/2006	672	73	2,943,360	0.1	1,483	0.27	0.27
10/6/2006	360	73	1,576,800	5,980	0.59	65	0.01	38	0.00	119	0.01	0.61	0.59	0.61	12/27/2006	960	73	4,204,800	0.0	1,296	0.34	0.61
10/13/2006	168	73	735,840	4,621	0.21	27	0.00	38	0.00	40	0.00	0.22	0.80	0.83	6/15/2007	4,080	73	17,870,400	0.1	1,483	1.65	2.26
10/20/2006	168	73	735,840	5,913	0.27	27	0.00	38	0.00	40	0.00	0.28	1.07	1.10	10/16/2007	2,952	73	12,929,760	0.1	1,483	1.20	3.46
11/17/2006	672	73	2,943,360	5,505	1.01	27	0.00	38	0.01	40	0.01	1.03	2.08	2.13	12/14/2007	1,416	73	6,202,080	0.1	1,483	0.57	4.03
12/27/2006	960	73	4,204,800	5,029	1.32	27	0.01	38	0.01	95	0.03	1.36	3.40	3.50	6/2/2008	4,104	73	17,975,520	2.2	5,401	6.06	10.09
3/30/2007	2,232	73	9,776,160	3,466	2.11	27	0.02	38	0.02	40	0.02	2.18	5.52	5.67	9/12/2008	2,448	73	10,722,240	0.3	1,856	1.24	11.33
6/15/2007	1,848	73	8,094,240	34	0.02	2,477	1.25	38	0.02	834	0.42	1.71	5.53	7.38	11/26/2008	1,800	73	7,884,000	0.1	1,483	0.73	12.06
10/16/2007	2,952	73	12,929,760	2,650	2.14	27	0.02	38	0.03	40	0.03	2.22	7.67	9.60	8/21/2009	6,432	73	28,172,160	3.8	8,387	14.74	26.80
12/14/2007	1,416	73	6,202,080	3,942	1.52	27	0.01	38	0.01	40	0.02	1.57	9.20	11.17	11/5/2009	1,824	73	7,989,120	2.1	5,215	2.60	29.40
3/27/2008	2,496	73	10,932,480	3,738	2.55	27	0.02	38	0.03	135	0.09	2.69	11.74	13.86	2/5/2010	2,208	73	9,671,040	2.3	5,588	3.37	32.77
6/2/2008	1,608	73	7,043,040	4,893	2.15	27	0.01	38	0.02	40	0.02	2.20	13.89	16.05	5/6/2010	2,160	55	7,128,000	2.2	5,401	2.40	35.17
9/12/2008	2,448	73	10,722,240	3,262	2.18	27	0.02	38	0.03	40	0.03	2.25	16.08	18.30	10/15/2010	3,888	73	17,029,440	2.0	5,028	5.34	40.51
11/26/2008	1,800	73	7,884,000	3,126	1.54	27	0.01	38	0.02	40	0.02	1.59	17.61	19.89	1/21/2011	2,352	55	7,761,600	1.9	4,841	2.34	42.86
3/24/2009	2,832	73	12,404,160	3,058	2.37	27	0.02	38	0.03	40	0.03	2.45	19.98	22.34	5/11/2011	2,640	73	11,563,200	1.9	4,841	3.49	46.35
6/15/2009	1,992	73	8,724,960	2,922	1.59	27	0.01	38	0.02	40	0.02	1.65	21.57	23.99	7/29/2011	1,896	73	8,304,480	1.1	3,349	1.73	48.08
8/21/2009	1,608	73	7,043,040	2,447	1.07	27	0.01	38	0.02	40	0.02	1.12	22.65	25.11	10/25/2011	2,112	55	6,969,600	2.1	5,215	2.27	50.35
11/5/2009	1,824	73	7,989,120	2,243	1.12	27	0.01	38	0.02	40	0.02	1.17	23.76	26.28	1/20/2012	2,088	55	6,890,400	1.7	4,468	1.92	52.27
2/5/2010	2,208	73	9,671,040	1,087	0.66	27	0.02	38	0.02	40	0.02	0.72	24.42	27.00	6/15/2012	3,528	55	11,642,400	2.4	5,774	4.19	56.46
4/23/2010	1,848	55	6,098,400	883	0.34	27	0.01	38	0.01	40	0.02	0.38	24.75	27.37	9/25/2012	2,448	73	10,722,240	2.5	5,961	3.99	60.45
7/23/2010	2,184	55	7,207,200	1,019	0.46	27	0.01	38	0.02	40	0.02	0.51	25.21	27.88	12/31/2012	2,328	73	10,196,640	0.3	1,856	1.18	61.63
10/15/2010	2,016	73	8,830,080	639	0.35	27	0.01	38	0.02	40	0.02	0.41	25.57	28.29	<b>TOTALS:</b>	<b>52,008</b>	<b>224,772,480</b>	<b>61.63</b>				
1/21/2011	2,352	55	7,761,600	951	0.46	27	0.01	38	0.02	40	0.02	0.51	26.03	28.80								
5/11/2011	2,640	73	11,563,200	1,495	1.08	27	0.02	38	0.03	40	0.03	1.15	27.10	29.95								
7/29/2011	1,896	73	8,304,480	449	0.23	27	0.01	38	0.02	40	0.02	0.29	27.34	30.24								
10/25/2011	2,112	55	6,969,600	748	0.33	27	0.01	38	0.02	40	0.02	0.37	27.66	30.61								
1/20/2012	2,088	55	6,890,400	680	0.29	27	0.01	512	0.22	40	0.02	0.54	27.95	31.15								
6/15/2012	3,528	55	11,642,400	483	0.35	7	0.01	38	0.03	40	0.03	0.41	28.30	31.57								
9/25/2012	2,448	73	10,722,240	680	0.45	7	0.00	38	0.03	40	0.03	0.51	28.76	32.08								
12/31/2012	2,328	73	10,196,640	1,631	1.04	11	0.01	845	0.54	40	0.03	1.61	29.80	33.68								
<b>TOTALS:</b>	<b>55,033</b>		<b>225,801,390</b>		<b>30</b>		<b>2</b>		<b>1</b>		<b>1</b>		<b>33.68</b>									

**Lab Data for Air Mitigation System B-2**  
**Fourth Quarter 2012**  
**1/15/2013**  
**Michigan Plaza**  
**3801-3823 West Michigan Street**  
**Indianapolis, Indiana**  
**MUNDELL Project No.: M01046**

B-2 (Lab Data)														B-2 (PID Readings)								
Sample Date	Hours per Cycle	Average Flow Rate (CFM)	Air Vol. Removed per Cycle (CF)	µg/m³ PCE removed	µg/m³ TCE removed	µg/m³ VC removed	µg/m³ cis-1,2-DCE	Lbs. cis-1,2-DCE removed	Lbs. Total Pollutants Removed	Cumulative PCE lbs Removed	Cumulative Total Pollutant lbs Removed	Sample Date	Hours Per Cycle	Average Flow Rate (CFM)	Air Vol. Removed per Cycle (CF)	PID Reading (ppm VOCs)	µg/m³ VOCs	Lbs. VOCs Removed	Cum Total lbs Removed (Est from PID)			
9/21/2006	0.5	37	1,110	5,369	0.00	65	0.00	38	0.00	40	0.00	0.00	0.00	0.00	0.1	1,483	0.14	0.14				
10/6/2006	360	37	799,200	4,553	0.23	27	0.00	38	0.00	40	0.00	0.23	0.23	0.23	0.1	1,483	0.20	0.34				
10/13/2006	168	37	372,960	2,447	0.06	27	0.00	38	0.00	40	0.00	0.06	0.28	0.29	0.1	1,483	0.84	1.17				
10/20/2006	168	37	372,960	3,738	0.09	27	0.00	38	0.00	40	0.00	0.09	0.37	0.38	0.1	1,483	0.61	1.78				
11/17/2006	672	37	1,491,840	3,194	0.30	27	0.00	38	0.00	40	0.00	0.31	0.67	0.69	0.1	1,483	0.43	2.21				
12/27/2006	960	37	2,131,200	3,194	0.42	27	0.00	38	0.01	40	0.01	0.44	1.09	1.13	0.1	1,483	8.30	10.51				
3/30/2007	2,232	38	5,088,960	1,223	0.39	27	0.01	38	0.01	40	0.01	0.42	1.48	1.55	0.5	2,229	0.76	11.27				
6/15/2007	1,848	42	4,656,960	2,107	0.61	27	0.01	38	0.01	40	0.01	0.64	2.09	2.19	2.4	5,774	9.79	21.05				
10/16/2007	2,952	48	8,501,760	1,631	0.86	27	0.01	38	0.02	40	0.02	0.92	2.96	3.11	1.6	4,282	2.75	23.80				
12/14/2007	1,416	53	4,502,880	2,311	0.65	27	0.01	38	0.01	40	0.01	0.68	3.61	3.79	0.6	2,416	1.10	24.90				
4/1/2008	2,616	50	7,848,000	2,447	1.20	27	0.01	38	0.02	40	0.02	1.25	4.81	5.04	1.4	3,908	1.17	26.07				
6/2/2008	1,488	42	3,705,120	3,806	0.88	27	0.01	38	0.01	40	0.01	0.90	5.68	5.94	3.2	7,267	5.82	31.89				
9/12/2008	2,448	37	5,434,560	3,194	1.08	27	0.01	38	0.01	40	0.01	1.12	6.77	7.06	1.4	3,908	1.89	33.78				
8/21/2009	1,440	37	3,196,800	1,087	0.22	27	0.01	38	0.01	40	0.01	0.24	6.98	7.30	1.6	4,282	1.57	35.34				
11/5/2009	1,824	37	4,049,280	951	0.24	27	0.01	38	0.01	40	0.01	0.27	7.22	7.57	1.7	4,468	1.2	36.52				
2/5/2010	2,208	55	7,286,400	251	0.11	27	0.01	38	0.02	40	0.02	0.16	7.34	7.73	1.9	4,841	1.4	37.93				
5/6/2010	2,160	37	4,795,200	1,019	0.30	27	0.01	38	0.01	40	0.01	0.34	7.64	8.06	1.5	4,095	1.2	39.12				
7/23/2010	1,872	37	4,155,840	1,291	0.33	27	0.01	38	0.01	40	0.01	0.36	7.98	8.43	2.8	6,521	3.2	42.30				
10/15/2010	2,016	55	6,652,800	442	0.18	27	0.01	38	0.02	40	0.02	0.23	8.16	8.65	2.9	6,707	2.3	44.58				
1/21/2011	2,352	55	7,761,600	183	0.09	27	0.01	38	0.02	40	0.02	0.14	8.25	8.79	4.3	9,320	4.5	49.04				
5/11/2011	2,640	37	5,860,800	1,835	0.67	27	0.01	38	0.01	40	0.01	0.71	8.92	9.50	<b>TOTALS:</b> 54,336 172,314,720 49.04							
7/29/2011	1,896	37	4,209,120	1,155	0.30	27	0.01	38	0.01	40	0.01	0.33	9.23	9.83								
10/25/2011	2,112	37	4,688,640	816	0.24	27	0.01	38	0.01	40	0.01	0.27	9.16	10.10								
1/20/2012	2,088	37	4,635,360	550	0.16	27	0.01	282	0.08	40	0.01	0.26	9.38	10.36								
6/15/2012	3,528	37	7,832,160	816	0.40	6	0.00	38	0.02	40	0.02	0.44	9.56	10.80								
9/25/2012	2,448	37	5,434,560	1,223	0.41	9	0.00	38	0.01	40	0.01	0.44	9.80	11.25								
12/31/2012	2,328	55	7,682,400	1,291	0.62	10	0.00	4,098	1.96	40	0.02	2.61	10.18	13.85								
<b>TOTALS:</b>	<b>48,241</b>		<b>123,148,470</b>		<b>11.05</b>		<b>0.18</b>		<b>2.31</b>		<b>0.31</b>		<b>13.85</b>									

**Lab Data for Air Mitigation System B-3**  
**Fourth Quarter 2012**  
**1/15/2013**  
**Michigan Plaza**  
**3801-3823 West Michigan Street**  
**Indianapolis, Indiana**  
**MUNDELL Project No.: M01046**

B-3 (Lab Data)														B-3 (PID Readings)								
Sample Date	Hours per Cycle	Average Flow Rate (CFM)	Air Vol. Removed per Cycle (CF)	µg/m³ PCE	Lbs. PCE removed	µg/m³ TCE	Lbs. TCE removed	µg/m³ VC	Lbs. VC removed	µg/m³ cis-1,2-DCE	Lbs. cis-1,2-DCE removed	Lbs. Total Pollutants Removed	Cumulative PCE lbs Removed	Cumulative Total Pollutant lbs Removed	Sample Date	Hours Per Cycle	Average Flow Rate (CFM)	Air Vol. Removed per Cycle (CF)	PID Reading (ppm VOCs)	µg/m³ VOCs	Lbs. VOCs Removed	Cum Total lbs Removed (Est from PID)
9/21/2006	0.5	132	3,960	4,553	0.00	27	0.00	38	0.00	40	0.00	0.00	0.00	0.00	11/17/2006	672	132	5,322,240	2.0	5,028	1.67	1.67
10/6/2006	360	132	2,851,200	6,592	1.17	27	0.00	38	0.01	40	0.01	1.19	1.17	1.19	12/27/2006	960	132	7,603,200	0.1	1,483	0.70	2.37
10/13/2006	168	132	1,330,560	3,534	0.29	27	0.00	38	0.00	40	0.00	0.30	1.47	1.49	6/15/2007	4,080	132	32,313,600	0.1	1,483	2.99	5.36
10/20/2006	168	132	1,330,560	6,048	0.50	27	0.00	38	0.00	40	0.00	0.51	1.97	2.01	10/16/2007	2,952	132	23,379,840	0.1	1,483	2.16	7.52
11/17/2006	672	132	5,322,240	5,301	1.76	27	0.01	38	0.01	40	0.01	1.79	3.73	3.80	12/14/2007	1,416	132	11,214,720	0.1	1,483	1.04	8.56
12/27/2006	960	132	7,603,200	5,097	2.42	27	0.01	38	0.02	40	0.02	2.47	6.15	6.27	6/2/2008	4,104	55	13,543,200	1.2	3,535	2.99	11.55
3/30/2007	2,232	132	17,677,440	3,874	4.27	27	0.03	38	0.04	40	0.04	4.39	10.42	10.65	9/12/2008	2,448	132	19,388,160	0.5	2,229	2.70	14.24
6/15/2007	1,848	132	14,636,160	1,427	1.30	27	0.02	38	0.04	40	0.04	1.40	11.72	12.05	11/26/2008	1,800	132	14,256,000	0.8	2,789	2.48	16.72
10/16/2007	2,952	132	23,379,840	1,903	2.78	27	0.04	38	0.06	40	0.06	2.93	14.50	14.98	8/21/2009	6,432	132	50,941,440	0.0	1,296	4.12	20.84
12/14/2007	1,416	132	11,214,720	3,534	2.47	27	0.02	38	0.03	40	0.03	2.55	16.97	17.53	11/5/2009	1,824	132	14,446,080	1.8	4,655	4.19	25.04
3/27/2008	2,496	132	19,768,320	3,806	4.69	27	0.03	38	0.05	40	0.05	4.82	21.66	22.35	2/5/2010	2,208	132	17,487,360	1.5	4,095	4.47	29.50
6/2/2008	1,608	55	5,306,400	3,330	1.10	27	0.01	38	0.01	40	0.01	1.14	22.76	23.49	5/6/2010	2,160	132	17,107,200	1.7	4,468	4.77	34.27
9/12/2008	2,448	132	19,388,160	3,602	4.36	27	0.03	38	0.05	40	0.05	4.48	27.12	27.97	10/15/2010	3,888	132	30,792,960	0.1	1,483	2.85	37.12
11/26/2008	1,800	132	14,256,000	2,447	2.18	27	0.02	38	0.03	40	0.04	2.27	29.30	30.24	1/21/2011	2,352	132	18,627,840	1.4	3,908	4.54	41.66
3/24/2009	2,832	132	22,429,440	3,738	5.23	27	0.04	38	0.05	40	0.06	5.38	34.52	35.62	4/8/2011	1,848	132	14,636,160	2.4	5,774	5.27	46.93
6/15/2009	1,992	132	15,776,640	2,854	2.81	27	0.03	38	0.04	40	0.04	2.91	37.33	38.53	5/11/2011	792	132	6,272,640	1.2	3,535	1.38	48.32
8/21/2009	1,608	132	12,735,360	3,194	2.54	27	0.02	38	0.03	40	0.03	2.62	39.87	41.15	7/29/2011	1,896	132	15,016,320	1.3	3,722	3.5	51.80
11/5/2009	1,824	132	14,446,080	2,786	2.51	27	0.02	38	0.03	40	0.04	2.61	42.38	43.75	10/25/2011	2,112	132	16,727,040	1.5	4,095	4.3	56.07
2/5/2010	2,208	132	17,487,360	951.44	1.04	26.93	0.03	38	0.04	40	0.04	1.15	43.42	44.91	1/20/2012	2,088	55	6,890,400	1.4	3,908	1.7	57.75
5/6/2010	2,160	132	17,107,200	1,699	1.81	27	0.03	38	0.04	40	0.04	1.93	45.23	46.83	6/15/2012	3,528	132	27,941,760	1.4	3,908	6.8	64.57
7/23/2010	1,872	132	14,826,240	816	0.75	27	0.02	38	0.04	40	0.04	0.85	45.99	47.68	9/25/2012	2,448	132	19,388,160	1.5	4,095	5.0	69.52
10/15/2010	2,016	132	15,966,720	34	0.03	27	0.03	38	0.04	40	0.04	0.14	46.02	47.82	12/31/2012	2,328	132	18,437,760	0.6	2,416	2.8	72.30
1/21/2011	2,352	132	18,627,840	NS	0.00	NS	0.00	NS	0.00	NS	0.00	0.00	46.02	47.82	<b>TOTALS:</b>	<b>54,336</b>		<b>401,734,080</b>		<b>72.30</b>		
4/8/2011	1,848	132	14,636,160	1,427	1.30	27	0.02	38	0.04	199	0.18	1.54	47.32	49.37								
5/11/2011	792	132	6,272,640	1,427	0.56	27	0.01	38	0.02	40	0.02	0.60	47.88	49.97								
7/29/2011	1,896	132	15,016,320	748	0.70	27	0.03	38	0.04	40	0.04	0.80	48.58	50.76								
10/25/2011	2,112	132	16,727,040	360	0.38	27	0.03	38	0.04	40	0.04	0.49	48.96	51.25								
1/20/2012	2,088	55	6,890,400	449	0.19	6	0.00	38	0.02	40	0.02	0.23	49.15	51.48								
6/15/2012	3,528	132	27,941,760	326	0.57	27	0.05	38	0.07	40	0.07	0.75	49.72	52.23								
9/25/2012	2,448	132	19,388,160	598	0.72	10	0.01	359	0.43	40	0.05	1.22	50.44	53.45								
12/31/2012	2,328	132	18,437,760	951	1.09	15	0.02	589	0.68	40	0.05	1.83	51.54	55.28								

TOTALS:	55,033		418,781,880		51.54		0.63		1.98		1.14		55.28		
---------	--------	--	-------------	--	-------	--	------	--	------	--	------	--	-------	--	--

**Lab Data for Air Mitigation System B-4**  
**Fourth Quarter 2012**  
**1/15/2013**  
**Michigan Plaza**  
**3801-3823 West Michigan Street**  
**Indianapolis, Indiana**  
**MUNDELL Project No.: M01046**

B-4 (Lab Data)													B-4 (PID Readings)									
Sample Date	Hours per Cycle	Average Flow Rate (CFM)	Air Vol. Removed per Cycle (CF)	µg/m³ PCE	Lbs. PCE removed	µg/m³ TCE	Lbs. TCE removed	µg/m³ VC	Lbs. VC removed	µg/m³ cis-1,2-DCE	Lbs. cis-1,2-DCE removed	Lbs. Total Pollutants Removed	Cumulative PCE lbs Removed	Cumulative Total Pollutant lbs Removed	Sample Date	Hours Per Cycle	Average Flow Rate (CFM)	Air Vol. Removed per Cycle (CF)	PID Reading (ppm VOCs)	µg/m³ VOCs	Lbs. VOCs Removed	Cum Total lbs Removed (Est from PID)
9/21/2006	0.5	132	3,960	1,903	0.00	27	0.00	38	0.00	40	0.00	0.00	0.00	0.00	11/17/2006	672	132	5,322,240	0.1	1,483	0.49	0.49
10/6/2006	360	132	2,851,200	2,107	0.37	27	0.00	38	0.01	40	0.01	0.39	0.38	0.39	12/27/2006	960	132	7,603,200	0.1	1,483	0.70	1.20
10/13/2006	168	132	1,330,560	1,427	0.12	27	0.00	38	0.00	40	0.00	0.13	0.49	0.52	6/15/2007	4,080	132	32,313,600	0.1	1,483	2.99	4.18
10/20/2006	168	132	1,330,560	1,495	0.12	27	0.00	38	0.00	40	0.00	0.13	0.62	0.65	10/16/2007	2,952	132	23,379,840	0.1	1,483	2.16	6.35
11/17/2006	672	132	5,322,240	1,019	0.34	27	0.01	38	0.01	40	0.01	0.37	0.96	1.03	12/14/2007	1,416	132	11,214,720	0.1	1,483	1.04	7.38
12/27/2006	960	132	7,603,200	748	0.35	27	0.01	38	0.02	40	0.02	0.40	1.31	1.43	3/29/2008	2,544	132	20,148,480	1.8	4,655	5.85	13.23
3/30/2007	2,232	130	17,342,640	211	0.23	27	0.03	38	0.04	40	0.04	0.34	1.54	1.77	6/2/2008	1,560	132	12,355,200	0.3	1,856	1.43	14.66
6/15/2007	1,848	125	13,887,720	3,126	2.71	27	0.02	38	0.03	40	0.03	2.80	4.25	4.57	9/12/2008	2,448	132	19,388,160	0.4	2,042	2.47	17.13
10/16/2007	2,952	128	22,627,080	455	0.64	27	0.04	38	0.05	40	0.06	0.79	4.89	5.36	11/26/2008	1,800	132	14,256,000	0.1	1,483	1.32	18.45
12/14/2007	1,416	132	11,214,720	951	0.67	27	0.02	38	0.03	40	0.03	0.74	5.56	6.10	8/21/2009	6,432	115	44,380,800	0.0	1,296	3.59	22.04
3/27/2008	2,496	128	19,094,400	503	0.60	27	0.03	38	0.05	40	0.05	0.72	6.15	6.83	11/6/2009	1,848	132	14,636,160	0.4	2,042	1.86	23.90
6/2/2008	1,608	119	11,481,120	680	0.49	27	0.02	38	0.03	40	0.03	0.56	6.64	7.39	2/5/2010	2,184	132	17,297,280	0.6	2,416	2.61	26.51
9/12/2008	2,448	132	19,388,160	883	1.07	27	0.03	38	0.05	40	0.05	1.20	7.71	8.58	4/23/2010	1,848	115	12,751,200	0.9	2,975	2.37	28.88
11/26/2008	1,800	132	14,256,000	748	0.66	27	0.02	38	0.03	40	0.04	0.76	8.37	9.34	10/15/2010	4,200	115	28,980,000	0.5	2,229	4.03	32.91
3/24/2009	2,832	132	22,429,440	34	0.05	27	0.04	38	0.05	40	0.06	0.19	8.42	9.54	1/21/2011	2,352	132	18,627,840	0.2	1,669	1.94	34.85
6/15/2009	1,992	132	15,776,640	136	0.13	27	0.03	38	0.04	40	0.04	0.24	8.56	9.77	5/11/2011	2,640	132	20,908,800	0.1	1,483	1.93	36.78
8/21/2009	1,608	132	12,735,360	95	0.08	27	0.02	38	0.03	40	0.03	0.16	8.63	9.93	7/29/2011	1,896	115	13,082,400	0.4	2,042	1.7	38.45
11/5/2009	1,824	132	14,446,080	34	0.03	27	0.02	38	0.03	40	0.04	0.13	8.66	10.06	10/25/2011	2,112	132	16,727,040	0.5	2,229	2.3	40.77
2/5/2010	2,208	132	17,487,360	82	0.09	27	0.03	38	0.04	40	0.04	0.20	8.75	10.26	1/20/2012	2,088	132	16,536,960	0.4	2,042	2.1	42.88
4/23/2010	1,848	115	12,751,200	116	0.09	27	0.02	38	0.03	40	0.03	0.18	8.84	10.44	6/15/2012	3,528	115	24,343,200	0.2	1,669	2.5	45.41
7/23/2010	2,184	115	15,069,600	34	0.03	27	0.03	38	0.04	40	0.04	0.13	8.87	10.57	9/25/2012	2,448	132	19,388,160	0.3	1,856	2.2	47.66
10/13/2010	1,968	115	13,579,200	34	0.03	27	0.02	38	0.03	40	0.03	0.12	8.90	10.69	12/31/2012	2,328	132	18,437,760	0.1	1,483	1.7	49.36
1/21/2011	2,400	132	19,008,000	34	0.04	27	0.03	38	0.05	40	0.05	0.16	8.94	10.85	<b>TOTALS:</b>	<b>54,336</b>		<b>412,079,040</b>		<b>49.36</b>		
5/11/2011	2,640	132	20,908,800	156	0.20	27	0.04	38	0.05	40	0.05	0.34	9.15	11.19								
7/29/2011	1,896	115	13,082,400	34	0.03	27	0.02	38	0.03	40	0.03	0.11	9.18	11.31								
10/25/2011	2,112	132	16,727,040	34	0.04	27	0.03	38	0.04	40	0.04	0.15	9.21	11.45								
1/20/2012	2,088	132	16,536,960	55	0.06	27	0.03	38	0.04	40	0.04	0.17	9.27	11.62								
6/15/2012	3,528	115	24,343,200	31	0.05	27	0.04	38	0.06	40	0.06	0.21	9.31	11.82								
9/25/2012	2,448	132	19,388,160	7	0.01	27	0.03	256	0.31	40	0.05	0.40	9.32	12.22								
12/31/2012	2,328	132	18,437,760	13	0.01	27	0.03	1,281	1.47	40	0.05	1.56	9.34	13.79								
<b>TOTALS:</b>	<b>55,033</b>		<b>420,440,760</b>		<b>9.34</b>		<b>0.71</b>		<b>2.70</b>		<b>1.04</b>		<b>13.79</b>									

**Lab Data for Air Mitigation System B-5**  
**Fourth Quarter 2012**  
**1/15/2013**  
**Michigan Plaza**  
**3801-3823 West Michigan Street**  
**Indianapolis, Indiana**  
**MUNDELL Project No.: M01046**

B-5 (Lab Data)														B-5 (PID Readings)							
Sample Date	Hours per Cycle	Average Flow Rate (CFM)	Air Vol. Removed per Cycle (CF)	µg/m³ PCE	Lbs. PCE removed	µg/m³ TCE	Lbs. TCE removed	µg/m³ VC	µg/m³ cis-1,2-DCE	Lbs. cis-1,2-DCE removed	Lbs. Total Pollutants Removed	Cumulative PCE lbs Removed	Cumulative Total Pollutant lbs Removed	Sample Date	Hours Per Cycle	Average Flow Rate (CFM)	Air Vol. Removed per Cycle (CF)	PID Reading (ppm VOCs)	µg/m³ VOCs	Lbs. VOCs Removed	Cum Total lbs Removed (Est from PID)
3/27/2008	0.5	130	3,900	883	0.00	27	0.00	38	0.00	40	0.00	0.00	0.00	3/29/2008	50	110	330,000	0.1	1,483	0.03	0.03
3/28/2008	24	127	182,880	496	0.01	27	0.00	38	0.00	40	0.00	0.01	0.01	6/2/2008	1,560	130	12,168,000	0.2	1,669	1.27	1.30
4/24/2008	648	120	4,665,600	367	0.11	27	0.01	38	0.01	40	0.01	0.14	0.11	7/10/2008	912	110	6,019,200	0.7	2,602	0.98	2.27
5/1/2008	168	115	1,159,200	394	0.03	27	0.00	38	0.00	40	0.00	0.04	0.14	9/12/2008	1,536	130	11,980,800	0.1	1,483	1.11	3.38
6/2/2008	768	114	5,253,120	401	0.13	27	0.01	38	0.01	40	0.01	0.17	0.27	11/26/2008	1,800	130	14,040,000	0.1	1,483	1.30	4.68
7/10/2008	912	115	6,292,800	442	0.17	27	0.01	38	0.02	40	0.02	0.21	0.45	8/21/2009	6,432	130	50,169,600	0.0	1,296	4.06	8.74
9/12/2008	1,536	114	10,506,240	469	0.31	27	0.02	38	0.03	40	0.03	0.38	0.75	11/5/2009	1,824	130	14,227,200	0.2	1,669	1.48	10.22
11/26/2008	1,800	113	12,204,000	489	0.37	27	0.02	38	0.03	40	0.03	0.45	1.13	2/5/2010	2,208	110	14,581,440	0.5	1,483	1.35	11.57
3/24/2009	2,832	122	20,730,240	1,427	1.85	27	0.03	38	0.05	40	0.05	1.98	2.97	5/6/2010	2,160	110	14,256,000	1.4	3,908	3.48	15.04
6/15/2009	1,992	122	14,581,440	394	0.36	27	0.02	38	0.03	40	0.04	0.45	3.33	10/15/2010	3,888	130	30,326,400	0.4	2,042	3.86	18.91
8/21/2009	1,608	122	11,770,560	428	0.31	27	0.02	38	0.03	40	0.03	0.39	3.64	1/21/2011	2,352	110	15,523,200	0.4	2,042	1.98	20.88
11/5/2009	1,824	122	13,351,680	883	0.74	27	0.02	38	0.03	40	0.03	0.82	4.38	5/11/2011	2,640	130	20,592,000	0.1	1,483	1.90	22.79
2/5/2010	2,208	110	14,572,800	150	0.14	26.93	0.02	38	0.03	40	0.04	0.23	4.52	5/29/2011	1,896	110	12,513,600	0.4	2,042	1.6	24.38
4/23/2010	1,848	110	12,196,800	82	0.06	27	0.02	38	0.03	40	0.03	0.14	4.58	10/25/2011	2,112	110	13,939,200	0.5	2,229	1.9	26.32
7/23/2010	2,184	110	14,414,400	183	0.16	27	0.02	38	0.03	40	0.04	0.26	4.74	1/20/2012	2,088	110	13,780,800	0.4	2,042	1.8	28.08
10/15/2010	2,016	130	15,724,800	102	0.10	27	0.03	38	0.04	40	0.04	0.20	4.84	6/15/2012	3,528	130	27,518,400	0.4	2,042	3.5	31.58
1/21/2011	2,352	110	15,523,200	224	0.22	27	0.03	38	0.04	40	0.04	0.32	5.06	9/25/2012	2,448	110	16,156,800	0.5	2,229	2.2	33.83
5/11/2011	2,640	130	20,592,000	394	0.51	27	0.03	38	0.05	40	0.05	0.64	5.57	12/31/2012	2,328	130	18,158,400	0.1	1,483	1.7	35.51
7/29/2011	1,896	110	12,513,600	150	0.12	27	0.02	38	0.03	40	0.03	0.20	5.68	<b>TOTALS:</b>	<b>41,762</b>		<b>306,281,040</b>			<b>35.51</b>	
10/25/2011	2,112	110	13,939,200	204	0.18	27	0.02	38	0.03	40	0.03	0.27	5.86	7.30							
1/20/2012	2,088	110	13,780,800	150	0.13	6	0.01	38	0.03	40	0.03	0.20	5.99	7.50							
6/15/2012	3,528	130	27,518,400	95	0.16	8	0.01	845	1.45	40	0.07	1.70	6.15	9.20							
9/25/2012	2,448	110	16,156,800	122	0.12	6	0.01	384	0.39	40	0.04	0.56	6.28	9.76							
12/31/2012	2,328	130	18,158,400	116	0.13	6	0.01	512	0.58	40	0.05	0.76	6.41	10.52							
<b>TOTALS:</b>	<b>41,761</b>		<b>295,792,860</b>		<b>6.41</b>		<b>0.40</b>		<b>2.98</b>		<b>0.73</b>		<b>10.52</b>								

**Lab Data for Air Mitigation System B-6**  
**Fourth Quarter 2012**  
**1/15/2013**  
**Michigan Plaza**  
**3801-3823 West Michigan Street**  
**Indianapolis, Indiana**  
**MUNDELL Project No.: M01046**

B-6 (Lab Data)													B-6 (PID Readings)									
Sample Date	Hours per Cycle	Average Flow Rate (CFM)	Air Vol. Removed per Cycle (CF)	µg/m³ PCE	Lbs. PCE removed	µg/m³ TCE	Lbs. TCE removed	µg/m³ VC	Lbs. VC removed	µg/m³ cis-1,2-DCE	Lbs. cis-1,2-DCE removed	Lbs. Total Pollutants Removed	Cumulative PCE lbs Removed	Cumulative Total Pollutant lbs Removed	Sample Date	Hours Per Cycle	Average Flow Rate (CFM)	Air Vol. Removed per Cycle (CF)	PID Reading (ppm VOCs)	µg/m³ VOCs	Lbs. VOCs Removed	Cum Total lbs Removed (Est from PID)
3/27/2008	0.5	130	3,900	8,155	0.00	27	0.00	38	0.00	40	0.00	0.00	0.00	0.00	3/29/2008	50	74	222,000	1.7	4,468	0.06	0.06
3/28/2008	24	119	171,144	3,330	0.04	27	0.00	38	0.00	40	0.00	0.04	0.04	0.04	6/2/2008	1,560	130	12,168,000	1.1	3,349	2.54	2.60
4/24/2008	648	114	4,426,488	748	0.21	27	0.01	38	0.01	40	0.01	0.24	0.24	0.27	8/20/2008	1,896	110	12,513,600	0.5	2,229	1.74	4.34
5/1/2008	168	123	1,234,800	1,427	0.11	27	0.00	38	0.00	40	0.00	0.12	0.35	0.39	9/12/2008	552	130	4,305,600	0.1	1,483	0.40	4.74
6/2/2008	768	120	5,506,560	1,495	0.51	27	0.01	38	0.01	40	0.01	0.55	0.87	0.94	11/26/2008	1,800	110	11,880,000	0.2	1,669	1.24	5.98
8/20/2008	1,896	120	13,651,200	1,835	1.56	27	0.02	38	0.03	40	0.03	1.65	2.43	2.59	8/21/2009	6,432	110	42,451,200	0.1	1,483	3.93	9.90
9/12/2008	552	114	3,775,680	1,223	0.29	27	0.01	38	0.01	40	0.01	0.31	2.72	2.91	11/5/2009	1,824	130	14,227,200	0.1	1,483	1.32	11.22
11/26/2008	1,800	112	12,096,000	748	0.56	27	0.02	38	0.03	40	0.03	0.64	3.28	3.55	2/5/2010	2,208	150	19,872,000	0.9	2,975	3.69	14.91
3/24/2009	2,832	118	20,050,560	883	1.10	27	0.03	38	0.05	40	0.05	1.24	4.39	4.79	5/12/2010	2,304	93	12,856,320	1.7	4,468	3.58	18.49
6/15/2009	1,992	118	14,103,360	571	0.50	27	0.02	38	0.03	40	0.03	0.59	4.89	5.38	10/15/2010	3,744	130	29,203,200	0.5	2,229	4.06	22.55
8/21/2009	1,608	118	11,384,640	483	0.34	27	0.02	38	0.03	40	0.03	0.42	5.23	5.80	1/21/2011	2,352	130	18,345,600	0.4	2,042	2.34	24.89
11/5/2009	1,824	118	12,913,920	748	0.60	27	0.02	38	0.03	40	0.03	0.69	5.83	6.49	5/11/2011	2,640	130	20,592,000	0.2	1,669	2.14	27.03
2/5/2010	2,208	150	19,872,000	544	0.67	27	0.03	38	0.05	40	0.05	0.80	6.51	7.29	7/29/2011	1,896	110	12,513,600	0.3	1,856	1.45	28.48
5/12/2010	2,304	93	12,856,320	883	0.71	26.93	0.02	38	0.03	40	0.03	0.79	7.22	8.08	10/25/2011	2,112	110	13,939,200	0.5	2,229	1.94	30.42
7/23/2010	1,728	110	11,404,800	680	0.48	27	0.02	38	0.03	40	0.03	0.56	7.70	8.64	1/20/2012	2,088	130	16,286,400	0.4	2,042	2.07	32.50
10/15/2010	2,016	130	15,724,800	129	0.13	27	0.03	38	0.04	40	0.04	0.23	7.83	8.87	6/15/2012	3,528	130	27,518,400	0.3	1,856	3.19	35.68
1/21/2011	2,352	130	18,345,600	333	0.38	27	0.03	38	0.04	40	0.05	0.50	8.21	9.37	9/25/2012	2,448	110	16,156,800	0.5	2,229	2.25	37.93
5/11/2011	2,640	130	20,592,000	415	0.53	27	0.03	38	0.05	40	0.05	0.67	8.74	10.04	12/31/2012	2,328	130	18,158,400	0.0	1,296	1.47	39.40
7/29/2011	1,896	110	12,513,600	143	0.11	27	0.02	38	0.03	40	0.03	0.19	8.85	10.23	<b>TOTALS:</b>	<b>41,762</b>		<b>303,209,520</b>		<b>39.40</b>		
10/25/2011	2,112	110	13,939,200	170	0.15	27	0.02	38	0.03	40	0.03	0.24	8.89	10.47								
1/20/2012	2,088	130	16,286,400	122	0.12	27	0.03	38	0.04	40	0.04	0.23	8.98	10.70								
6/15/2012	3,528	130	27,518,400	75	0.13	27	0.05	359	0.62	40	0.07	0.86	9.02	11.56								
9/25/2012	2,448	110	16,156,800	211	0.21	27	0.03	282	0.28	40	0.04	0.56	9.19	12.12								
12/31/2012	2,328	130	18,158,400	163	0.18	27	0.03	359	0.41	40	0.05	0.67	9.20	12.79								
<b>TOTALS:</b>	<b>41,761</b>		<b>302,686,572</b>		<b>9.65</b>		<b>0.51</b>		<b>1.88</b>		<b>0.75</b>		<b>12.79</b>									

**Lab Data for Air Mitigation System B-7**  
**Fourth Quarter 2012**  
**1/15/2013**  
**Michigan Plaza**  
**3801-3823 West Michigan Street**  
**Indianapolis, Indiana**  
**MUNDELL Project No.: M01046**

B-7 (Lab Data)														B-7 (PID Readings)								
Sample Date	Hours per Cycle	Average Flow Rate (CFM)	Air Vol. Removed per Cycle (CF)	µg/m³ PCE	Lbs. PCE removed	µg/m³ TCE	Lbs. TCE removed	µg/m³ VC	Lbs. VC removed	µg/m³ cis-1,2-DCE	Lbs. cis-1,2-DCE removed	Lbs. Total Pollutants Removed	Cumulative PCE lbs Removed	Cumulative Total Pollutant lbs Removed	Sample Date	Hours Per Cycle	Average Flow Rate (CFM)	Air Vol. Removed per Cycle (CF)	PID Reading (ppm VOCs)	µg/m³ VOCs	Lbs. VOCs Removed	Cum Total lbs Removed (Est from PID)
4/7/2008	0.5	118	3,540	516	0.00	27	0.00	38	0.00	40	0.00	0.00	0.00	0.00	6/2/2008	1,344	130	10,483,200	0.3	1,856	1.21	1.21
4/8/2008	24	118	169,920	319	0.00	27	0.00	38	0.00	40	0.00	0.00	0.00	0.00	7/10/2008	912	110	6,019,200	0.5	2,229	0.84	2.05
4/24/2008	384	118	2,718,720	150	0.03	27	0.00	38	0.01	40	0.01	0.04	0.03	0.05	9/12/2008	1,536	130	11,980,800	0.1	1,483	1.11	3.16
5/1/2008	168	120	1,209,600	265	0.02	27	0.00	38	0.00	40	0.00	0.03	0.05	0.08	11/26/2008	1,800	110	11,880,000	0.2	1,669	1.24	4.40
6/2/2008	768	117	5,391,360	360	0.12	27	0.01	38	0.01	40	0.01	0.16	0.17	0.23	8/21/2009	6,432	132	50,941,440	0.1	1,483	4.71	9.11
7/10/2008	912	118	6,456,960	367	0.15	27	0.01	38	0.02	40	0.02	0.19	0.32	0.42	11/5/2009	1,824	130	14,227,200	0.0	1,296	1.15	10.26
9/12/2008	1,536	114	10,506,240	367	0.24	27	0.02	38	0.03	40	0.03	0.31	0.56	0.73	2/5/2010	2,208	110	14,572,800	0.1	1,483	1.35	11.60
11/26/2008	1,800	112	12,096,000	381	0.29	27	0.02	38	0.03	40	0.03	0.37	0.85	1.10	5/6/2010	2,160	130	16,848,000	0.0	1,296	1.36	12.97
3/24/2009	2,832	118	20,050,560	401	0.50	27	0.03	38	0.05	40	0.05	0.63	1.35	1.73	10/15/2010	3,888	130	30,326,400	0.1	1,483	2.80	15.77
6/15/2009	1,992	118	14,103,360	34	0.03	27	0.02	38	0.03	40	0.03	0.12	1.38	1.85	1/21/2011	2,352	130	18,345,600	0.1	1,483	1.70	17.47
8/21/2009	1,608	118	11,384,640	34	0.02	27	0.02	38	0.03	40	0.03	0.10	1.40	1.95	5/11/2011	2,640	130	20,592,000	0.0	1,296	1.66	19.13
11/5/2009	1,824	118	12,913,920	34	0.03	27	0.02	38	0.03	40	0.03	0.11	1.43	2.06	7/29/2011	1,896	130	14,788,800	0.3	1,856	1.71	20.84
2/5/2010	2,208	110	14,572,800	34	0.03	27	0.02	38	0.03	40	0.04	0.13	1.46	2.19	10/25/2011	2,112	130	16,473,600	0.1	1,483	1.52	22.37
4/23/2010	1,848	130	14,414,400	34	0.03	27	0.02	38	0.03	40	0.04	0.13	1.49	2.32	1/20/2012	2,088	130	16,286,400	0.1	1,483	1.51	23.87
7/23/2010	2,184	130	17,035,200	34	0.04	27	0.03	38	0.04	40	0.04	0.15	1.53	2.46	6/15/2012	3,528	130	27,518,400	0.0	1,296	2.22	26.10
10/15/2010	2,016	130	15,724,800	34	0.03	27	0.03	38	0.04	40	0.04	0.14	1.56	2.60	9/2/2012	1,896	130	14,788,800	0.1	1,483	1.37	27.47
1/21/2011	2,352	130	18,345,600	34	0.04	27	0.03	38	0.04	40	0.05	0.16	1.60	2.76	12/31/2012	2,880	130	22,464,000	0.0	1,296	1.82	29.28
5/11/2011	2,640	130	20,592,000	34	0.04	27	0.03	38	0.05	40	0.05	0.18	1.64	2.94	<b>TOTALS:</b>		<b>41,496</b>		<b>318,536,640</b>		<b>29.28</b>	
7/29/2011	1,896	130	14,788,800	34	0.03	27	0.02	38	0.04	40	0.04	0.13	1.67	3.07								
10/25/2011	2,112	130	16,473,600	34	0.03	27	0.03	38	0.04	40	0.04	0.14	1.71	3.21								
1/20/2012	2,088	130	16,286,400	20	0.02	27	0.03	38	0.04	40	0.04	0.13	1.73	3.34								
6/15/2012	3,528	130	27,518,400	17	0.03	27	0.05	307	0.53	135	0.23	0.83	1.76	4.17								
9/25/2012	2,448	130	19,094,400	34	0.04	27	0.03	38	0.05	40	0.05	0.17	1.80	4.34								
12/31/2012	2,328	130	18,158,400	34	0.04	27	0.03	384	0.44	40	0.05	0.55	1.84	4.88								
<b>TOTALS:</b>	<b>41,497</b>		<b>310,009,620</b>		<b>1.84</b>		<b>0.52</b>		<b>1.60</b>		<b>0.93</b>		<b>4.88</b>									

**Michigan Plaza**  
**Fourth Quarter 2012**  
**1/15/2013**  
**Michigan Plaza**  
**3801-3823 West Michigan Street**  
**Indianapolis, Indiana**  
**MUNDELL Project No.: M01046**

<b>Cumulative Totals (B-1-B-4)</b>				
Sample Date	Lbs PCE Removed	Cumulative PCE lbs Removed	Lbs. Total Pollutants Removed	Cumulative Total Pollutant lbs Removed
9/21/2006	0.00	0.00	0.00	0.00
10/6/2006	2.36	2.36	2.43	2.43
10/13/2006	0.68	3.05	0.71	3.14
10/20/2006	0.98	4.03	1.01	4.14
11/17/2006	3.41	7.44	3.51	7.65
12/27/2006	4.52	11.95	4.67	12.32
3/30/2007	7.00	18.95	7.33	19.65
6/15/2007	4.64	23.59	6.55	26.20
10/16/2007	6.42	30.01	6.86	33.06
12/14/2007	5.31	35.33	5.53	38.59
3/27/2008	7.84	43.17	8.23	46.82
4/1/2008	1.20	44.36	1.25	48.07
6/2/2008	4.62	48.98	4.80	52.87
9/12/2008	8.69	57.67	9.05	61.92
11/26/2008	4.38	62.05	4.62	66.54
3/24/2009	7.64	69.69	8.02	74.55
6/15/2009	4.53	74.23	4.80	79.35
8/21/2009	3.90	78.13	4.14	83.49
11/5/2009	3.90	82.03	4.17	87.66
2/5/2010	1.90	83.93	2.24	89.90
4/23/2010	0.43	84.36	0.55	90.45
7/23/2010	1.58	85.94	1.85	92.30
10/15/2010	0.57	86.50	0.78	93.07
1/21/2011	0.59	87.09	0.82	93.89
4/8/2011	1.30	88.40	1.54	95.43
5/11/2011	2.51	90.91	2.80	98.24
7/29/2011	1.26	92.17	1.53	99.77
10/25/2011	0.97	93.15	1.27	101.04
1/20/2012	0.70	93.85	1.19	102.23
6/15/2012	1.36	95.21	1.81	104.04
9/25/2012	1.60	96.81	2.57	106.61
12/31/2012	2.77	99.58	7.61	114.23

**Maple Creek Village Apartments**  
**Fourth Quarter 2012**  
**1/15/2013**  
**Michigan Plaza**  
**3801-3823 West Michigan Street**  
**Indianapolis, Indiana**  
**MUNDELL Project No.: M01046**

<b>Cumulative Totals (B-5-B-7)</b>				
Sample Date	Lbs PCE Removed	Cumulative PCE lbs Removed	Lbs. Total Pollutants Removed	Cumulative Total Pollutant lbs Removed
3/27/2008	0.00	0.00	0.00	0.00
3/28/2008	0.04	0.04	0.04	0.05
4/7/2008	0.00	0.04	0.00	0.05
4/8/2008	0.00	0.05	0.00	0.05
4/24/2008	0.34	0.39	0.42	0.47
5/1/2008	0.16	0.54	0.18	0.65
6/2/2008	0.77	1.31	0.87	1.52
7/10/2008	0.32	1.63	0.40	1.93
8/20/2008	1.56	3.19	1.65	3.58
9/12/2008	0.84	4.03	1.00	4.58
11/26/2008	1.22	5.25	1.46	6.04
3/24/2009	3.45	8.71	3.85	9.89
6/15/2009	0.89	9.60	1.17	11.06
8/21/2009	0.68	10.28	0.91	11.97
11/5/2009	1.37	11.64	1.62	13.59
2/5/2010	0.84	12.48	1.16	14.75
4/23/2010	0.09	12.58	0.27	15.02
7/23/2010	0.68	13.26	0.97	15.98
10/15/2010	0.26	13.52	0.57	16.55
1/21/2011	0.64	14.16	0.98	17.53
5/11/2011	1.08	15.24	1.49	19.02
7/29/2011	0.26	15.50	0.52	19.54
10/25/2011	0.36	15.86	0.65	20.19
1/20/2012	0.27	16.13	0.56	20.75
6/15/2012	0.32	16.45	3.39	24.14
9/25/2012	0.38	16.83	1.29	25.42
12/31/2012	0.35	17.18	1.98	27.40

**Cumulative Total LBS Removed**  
**Fourth Quarter 2012**  
**1/15/2013**  
**Michigan Plaza**  
**3801-3823 West Michigan Street**  
**Indianapolis, Indiana**  
**MUNDELL Project No.: M01046**

<b>Cumulative Totals (B-1-B-7)</b>				
Sample Date	Lbs PCE Removed	Cumulative PCE lbs Removed	Lbs. Total Pollutants Removed	Cumulative Total Pollutant lbs Removed
9/21/2006	0.00	0.00	0.00	0.00
10/6/2006	2.36	2.36	2.43	2.43
10/13/2006	0.68	3.05	0.71	3.14
10/20/2006	0.98	4.03	1.01	4.14
11/17/2006	3.41	7.44	3.51	7.65
12/27/2006	4.52	11.95	4.67	12.32
3/30/2007	7.00	18.95	7.33	19.65
6/15/2007	4.64	23.59	6.55	26.20
10/16/2007	6.42	30.01	6.86	33.06
12/14/2007	5.31	35.33	5.53	38.59
3/27/2008	7.84	43.17	8.23	46.82
3/28/2008	0.04	43.21	0.04	46.87
4/1/2008	1.20	44.41	1.25	48.12
4/7/2008	0.00	44.41	0.00	48.12
4/8/2008	0.00	44.41	0.00	48.12
4/24/2008	0.34	44.75	0.42	48.54
5/1/2008	0.16	44.91	0.18	48.72
6/2/2008	5.38	50.29	5.67	54.39
7/10/2008	0.32	50.61	0.40	54.80
8/20/2008	1.56	52.18	1.65	56.45
9/12/2008	9.53	61.70	10.05	66.49
11/26/2008	5.60	67.30	6.08	72.57
3/24/2009	11.10	78.40	11.87	84.44
6/15/2009	5.42	83.82	5.97	90.41
8/21/2009	4.59	88.41	5.05	95.46
11/5/2009	5.26	93.67	5.79	101.25
2/5/2010	2.74	96.41	3.40	104.65
4/23/2010	0.52	96.93	0.82	105.47
7/23/2010	2.26	99.20	2.82	108.28
10/15/2010	0.83	100.02	1.34	109.63
1/21/2011	1.23	101.25	1.80	111.42
4/8/2011	1.30	102.55	1.54	112.96
5/11/2011	3.59	106.15	4.29	117.26
7/29/2011	1.52	107.67	2.05	119.31
10/25/2011	1.33	109.01	1.92	121.23
1/20/2012	0.97	109.98	1.75	122.98
6/15/2012	1.69	111.67	5.20	128.18
9/25/2012	1.98	113.64	3.86	132.04
12/31/2012	3.12	116.76	9.59	141.63

## **APPENDIX C**

Cumulative Low Flow Sampling Data

**Appendix C**  
 Low Flow Data  
 4th Quarter 2012  
 Michigan Plaza  
 3801-3823 West Michigan Street  
 Indianapolis, Indiana  
 MUNDELL Project No.: M01046

Well ID	Date	pH	Conductivity	Temperature (°F)	Dissolved Oxygen (ug/L)	Oxygen Reduction Potential (mV)
MMW-1S	11/14/2012	6.53	1314	66.04	343	72
MMW-4D	11/13/2012	6.87	1693	62.89	625	-96
MMW-6D	11/13/2012	7.11	819.5	63.41	455	-134
MMW-8S	11/15/2012	6.79	1145	64.47	284	-80
MMW-9S	11/14/2012	6.66	1224	57.09	1504	-81
MMW-10S	11/15/2012	6.54	1652	68.05	223	-67
MMW-11S	11/13/2012	6.90	1174	62.13	237	107
MMW-11D	11/13/2012	6.99	1003	60.67	377	11
MMW-12S	11/13/2012	6.32	1032	66.22	255	59
MMW-13D	11/13/2012	7.23	903.2	61.98	486	-118
MMW-14D	11/13/2012	6.25	960.7	62.33	228	-38
MMW-15S	11/21/2012	6.96	859	62.02	395	105
MMW-15D	11/21/2012	7.39	649	59.98	233	-149
MMW-P-01	11/14/2012	6.65	1869	64.76	277	-103
MMW-P-02	11/14/2012	6.72	1579	63.58	145	-132
MMW-P-03S	11/14/2012	6.86	729.6	64.09	174	-177
MMW-P-03D	11/14/2012	6.75	1085	62.92	157	-189
MMW-P-04	11/21/2012	6.82	726.5	64.43	973	-227
MMW-P-05	11/14/2012	6.94	907	62.99	237	-215
MMW-P-06	11/14/2012	6.82	1237	63.44	204	-141
MMW-P-07	11/14/2012	6.63	2295	64.89	275	-120
MMW-P-08	11/14/2012	6.61	1868	66.07	127	-162
MMW-P-09S	11/13/2012	6.93	678.9	61.07	803	196
MMW-P-09D	11/13/2012	7.13	861.4	57.94	170	-102
MMW-P-10S	11/14/2012	6.67	1107	65.62	171	-163
MMW-P-10D	11/14/2012	6.76	1359	62.90	159	-159
MMW-P-11S	11/15/2012	6.77	1154	60.86	315	-27
MMW-P-11DR	11/15/2012	6.87	1291	58.64	140	-72
MMW-P-12S	11/19/2012	6.97	1164	63.07	726	-101
MMW-P-12D	11/19/2012	7.00	1437	61.41	531	-116
MMW-P-13S	11/19/2012	6.95	1114	58.65	4503	105
MMW-P-13D	11/19/2012	7.11	1294	57.03	340	-98
MMW-P-14S	11/20/2012	6.83	1213	61.28	891	80
MMW-P-14D	11/20/2012	7.02	1376	59.96	308	-89
MW-167S	Insufficient Water - Sample Not Collected					
MW-167D	11/16/2012	7.15	852.1	60.50	316	-94
MW-168D	11/16/2012	6.90	1186	64.28	211	-104
MW-170S	11/16/2012	6.93	1484	61.82	2316	171
MW-170D	11/16/2012	7.04	1224	59.13	200	-119
MMW-C-01	11/15/2012	6.80	757.3	63.33	510	-31
MMW-C-02S	11/13/2012	6.27	665.5	58.63	166	11
MMW-C-02D	11/19/2012	6.93	1226	58.90	488	-102
MMW-C-16S	11/19/2012	6.59	1373	64.08	807	5
MMW-C-16D	11/19/2012	6.92	1368	61.76	472	-93
MMW-C-17D	11/20/2012	7.06	1183	58.29	293	-140

ug/L - micrograms per liter

mV - millivolts